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DOMESTIC RESPONSES TO NINETEENTH-CENTURY INDUSTRIALIZATION: AN ARCHEOLOGY OF PARK BUILDING 48, HARPERS FERRY NATIONAL HISTORICAL PARK

Paul A. Shackel, *Editor*

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Paul A. Shackel
Supervisory Archeologist

MANAGEMENT SUMMARY

This report documents the archeological excavations for Park Building 48, Harpers Ferry National Historical Park (46JF92). The structure is situated on the eastern portion of Lot 2, north of Shenandoah Street, northeast of Virginius Island. Archeological field investigations were performed by the Division of Archeology, Harpers Ferry National Historical Park, from August 13, 1990 through November 16, 1990. A total of 15 excavation units were dug.

The original topography around Park Building 48 was about 3.0 to 4.0 ft lower than the present elevation. The structure's original core was built in the 1820s and measured 19 ft by 15.5 ft. Between 1832 and 1851 the rear extension, measuring 17.5 ft by 19 ft, was added to the north side of the building. By 1841, the topography was about 1.5 to 2.0 ft higher and the two story east wing extension was added. While the earlier 1820s and 1830s landscape was made more formalized with grasses, the later 1840s and 1850s landscape is comparatively unkept and contained an abundance of weeds. After the early 1840s, it appears that the armory's industrialization took precedence over maintaining a formal "natural" landscaped environment.

Excavations at Park Building 48 provides some of the first evidence of piecework performed at home by armory workers. A relatively large number of files (flat, round, and triangular) and weapon parts were found in the pre-1841 assemblage around the house. The materials may be a product of home production since some workers were paid by the piece. Another scenario is that the government frequently sold tools to the public and the tool and weapon assemblage may be a product of an armorer's attempt to supplement his family's income. A sparseness of weapon parts in the post-1841 deposits may be evidence of stricter manufacturing regulations, including the implementation of factory discipline and the abandonment of the piecework process.

Dramatic differences are also noticeable in the armory worker's dining wares. A vessel analysis of plates and teawares reveals a significant difference between the pre-1841 and the post-1841 occupations. The earlier deposits contain relatively higher quality ceramics including porcelains and fashionable transfer prints. The later occupations produced materials that would have been outdated by several decades.

Faunal analysis provides significant contrasting data between the pre-1841 and the post-1841 assemblages. The earlier context has a higher proportion of cow than pig bones. Sheep/goat became significantly less important in the later occupations. Home food production appears to have increased as pig became increasingly important in the post-1841 diet.

Merritt Roe Smith (1977) notes a dramatic change in factory production after 1841. There also appears to be a dramatic change in the domestic consumption of goods and foods about this time. While workers became relatively compliant within the work area, they may have become more defiant in their own social arena. Reverting to a lifestyle and material culture of past generations may be interpreted by some as a product of poverty. Armory workers increasingly relied upon domestic foods, such as pig, and used unfashionable goods that were popular a generation earlier when the armory ran according to a task-oriented system. Whether their choice to acquire these goods was an economic decision or a resolution to resist the new industrial culture is unknown, but the archeological record does indicate a very strong correlation between the changing work system and a new domestic material culture.

CHAPTER 1

AN ARCHEOLOGY OF AN ARMORY DWELLING, HARPERS FERRY, WEST VIRGINIA

Paul A. Shackel

BACKGROUND

This report constitutes the archeological component for the cultural landscape report, historic structures report, and archeological research report for Park Building 48, Package 118, Harpers Ferry National Historical Park. The structure is situated on the eastern portion of Lot 2, north of Shenandoah Street, northeast of Virginius Island, and borders the heart of Harpers Ferry's commercial district. Archeological field investigations were sponsored by the National Park Service and performed by the Division of Archeology at Harpers Ferry National Historical Park, from August 13, 1990 through November 16, 1990. This report consists of ten chapters, each written to stand by itself for those interested in pursuing specific topics. Therefore some repetition of background may occur.

The house under investigation was originally constructed in the 1820s along with a bake oven, smokehouse, privy, and stable. While it is uncertain whether its original owner actually inhabited the building, armory workers and their families probably occupied the building for most of the first half of the nineteenth century. While armory records from 1841 to 1852 indicate the specific households that rented the structure, armory records dating before and after this era have been destroyed, thus making identifications of specific families in the structure tentative.

Historians have made significant contributions interpreting the changing physical history of Harpers Ferry (see Snell, 1981a, 1981b), and the development of new technology and social unrest (Smith 1977), although little attention has been paid to the social and domestic relations of armory workers' everyday life in an armory town. This archeological analysis of an urban house lot provides data on the everyday life of the workers' households in an industrializing town. This work demonstrates the dynamic history associated with armory workers and demonstrates how the town's inhabitants shaped and created the urban landscape and the material culture remains. In summary, this report contributes to understanding the historic cultural landscape, reveals particulars about the development of an armory worker's house, and provides information about armory workers' social relations within the context of a developing industrial town.

Research Goals

Archeological and Landscape Analysis. Archeological excavations yield information about the chronology of structural additions, modifications, and changing historic grade. Using historic maps as a guide, investigations centered around the east wing addition to determine the location of the articulation between the addition and the building. While only scant traces of outbuildings were located, they provided information about the dynamic cultural landscape and its transformation through time. Paul Shackel (this volume) analyzes the changing topography and the built environment in the context of the changing meanings and uses of landscapes related to an early armory domestic dwelling which also later served domestic and commercial functions. Landscapes are an indication of how this urbanizing community ordered their world. Landscapes not only reflected the resident's behavior, but they also shaped and reinforced behavior (Lowenthal 1985; Lynch 1972). Connections between increased factory discipline, commercial endeavors, and domestic needs are related to the changing landscape.

In addition to the physical evidence other forms of data prove useful in interpreting the landscape. Pollen and phytolith analyses provide information on the changing formality of the armorer's yardscape. Both pollen analysis by Linda Scott Cummings (this volume) and phytolith analysis by Irwin Rovner (this volume) contribute significantly to an understanding of changing land uses by different occupants.

Domestic Life and Consumer Behavior Among Armory Workers. In the early armory era funds to erect armory dwellings usually came from arms appropriations (Snell 1980b). From the beginning lodging for armory workers and their families was in demand. Through 1831 the armory superintendent reimbursed workers who constructed their own domiciles on public lands. Along with a comparatively undisciplined work and domestic life, armory workers constructed dwellings of various floor plans, sizes, and materials (Snell 1981a, 1981b). This lack of corporate mentality differed dramatically from many New England corporate towns where standardized furnishings, foods, and dwellings were provided by the company to promote materially the personal discipline of the workplace (Beaudry and Mrozowski 1988; Dublin 1979; Hanlan 1981; Hareven 1978, 1982). Regimented work and domestic life became increasingly important to the operations of Harpers Ferry after 1831. In this year the armory subscribed to standardized housing, and by 1841 rules of work discipline were enforced (Smith 1977). Changes in behavior not only occurred in the workplace, but were also found in everyday life. Accompanying these changes was a new material culture that helped to create and reinforce these changes. These new behaviors and goods became the norm for everyday existence in industrializing America and is very much part of our modern-day culture.

Archeology provides insight into the effects of industrialization in everyday life and furnishes information about the development of changing social relations between people as a result of this phenomenon. From the early nineteenth century, Harpers Ferry's economy increasingly became linked with the core areas of east coast industrialism, especially through the improved transportation that came with the development of the Potomac Canal (1807), the Chesapeake and Ohio Canal (1833), and the Baltimore and Ohio Railroad (1837). The extent to which households and residents of different socioeconomic status relied on regional and national networks, and were influenced by the development of a new factory discipline on the domestic level, is discussed by Michael Lucas (this volume), Brett Burk (this volume), and Eric Larsen (this volume).

Lucas examines the ceramic consumption patterns of an armory worker's household and reveals the relationship between the diversity of the ceramic assemblage and the acceptance or rejection of modern discipline into the households. While new and more fashionable ceramics were available to a greater portion of the population due to the town's connection to a more efficient transportation infrastructure, the families who resided in Park Building 48 did not necessarily purchase the most fashionable goods. Burk's faunal analysis compliments Lucas' material findings. Conventional wisdom dictates that as industrialization became increasingly prevalent, armory workers increasingly would rely on regional and national sources for foods and diet. This phenomenon is not the case for the armory worker's household's procurement for subsistence. Larsen describes the social and political contexts in which armory tools and weapons were found at the domestic site. A relatively large amount of tools and weapons in the site's earliest component may reflect the armory's craft ethos that prevailed throughout the 1830s. Armorers may have taken piecework home to reach monthly quotas. Fewer tools found in the later contexts may reveal the increasing control that the armory had over their workers with the implementation of work discipline and the abolition of piecework by 1841.

OVERVIEW

Generally, this material culture and landscape analysis provides one of the few glimpses into the daily life of armory workers' families domestic life. From the advent of the consumer revolution, type and quantity of material goods played an increasing role in structuring society. The acceptance or rejection of consumer goods, the acceptance and eventual rejection of the craft ethos, use and manipulation of landscape, and changing diet became prominent issues in industrializing and urbanizing society. These archeological analyses of armory workers' domestic life provides important information about how people adapted to changing work and domestic conditions in an industrializing society.

CHAPTER 2

A SOCIAL HISTORY OF HARPERS FERRY AND PARK BUILDING 48 -- AN ARMORY DWELLING

Paul A. Shackel and Michael T. Lucas

GENERAL HISTORY OF HARPERS FERRY

From the end of the French and Indian War, George Washington speculated on land along the Potomac River (Mitchell 1977:59,127). He became deeply involved in the affairs of the Potomac Company and was dedicated to improving navigation along the river. This improvement, he believed, would attract trade to the ports of Alexandria and Georgetown and would create economic growth in the new Federal City and the Potomac Valley region (Smith 1977:27-28).

The building of the United States Armory at Harpers Ferry began in 1799 and the first guns were produced by 1801. An 1805 observer described the town as having a post office and about 15 houses (Scott 1805). By 1810 it had "a good tavern, several large stores for goods, a library, one physician, and a professor of the English language" (Vale in Noffsinger 1958:20).

During the first several decades of the nineteenth century the Harpers Ferry Armory operated in a craft production system. Since workers were only bound to their job by a quota system the pace of work and time spent on the task was determined by the individual. Merritt Roe Smith (1977:65) explains that "in this scheme, strict adherence to clocked time, unvarying routine, and regimented behavior had little importance." In this task-oriented production the armorer had a high degree of manual skill and knowledge of many different aspects of gun making. These craftsmen perceived the introduction of labor-saving machinery as a threat to their way of life. They considered themselves artisans, "not machine tenders, and, as such, believed in the dictum that an armorer's task consisted in making a complete product -- lock, stock, and barrel" (Smith 1977:67-68).

In the 1830s, Harpers Ferry became an important transportation and communication center between the Ohio and Shenandoah valleys and the East. The linking of Harpers Ferry to regional and national networks was instrumental to its economic growth (Everhart 1952:22). For instance, the Harpers Ferry, Charles Town, and Smithfield Turnpike Company, organized in 1830, connected Harpers Ferry with the West. That same year the Frederick and Harpers Ferry Turnpike Company constructed a toll road connecting those two towns. In 1834, two stage coach companies competed in Harpers Ferry, the Baltimore and Winchester Mail Stage Company, and the People's Line of Troy Coaches (Snell 1973:11-13). As a result of these transportation systems, Harpers Ferry developed a service industry.

The arrival of the Chesapeake and Ohio Canal in 1833 offered a cheaper means of transportation for people and goods. By December 1, 1834, the Baltimore and Ohio Railroad was completed to a point opposite Harpers Ferry on the Maryland side of the Potomac. In March 1836, the Winchester and Potomac Railroad made its first trip from Winchester to

Harpers Ferry. The Baltimore and Ohio Railroad constructed a bridge across the river in 1837, reducing travel between Harpers Ferry and Baltimore to six hours. The connection of the Winchester and Potomac and the Baltimore and Ohio lines linked the head of the Shenandoah Valley with the East (Bushong 1941:83-84). Harpers Ferry became a regular stopping place for passengers to dine and room. By the 1840s, the hotels located nearest the junction of the Baltimore and Ohio and Winchester and Potomac railroads thrived. Those more distant either closed or converted to another mercantile function (Snell 1973:14-15).

In the 1840s, the armory's labor system underwent major revisions. A military superintendent replaced the civilian management system and proceeded to enforce factory discipline. A clock was installed in the armory and all workers labored to standardized time. In order to easily accommodate the shift in work habits the armory changed the factory environment. Most of the armory buildings were unsuited for the implementation of a division of labor as they lacked architectural and functional unity found in other factory systems located in the Middle Atlantic and New England. In 1844, Superintendent Major John Symington, an engineer, created a plan for the armory's renovation by developing a standard and uniform architecture. Armory workers protested the enforcement of factory discipline, fearing that they would become mere tenders of machinery, which is how they saw their New England counterparts (Smith 1977). The armorers went on strike, rented a canal boat, and marched to President Tyler. There the president noted that he was sympathetic to the worker's cause but told them that they must "hammer out their own salvation" (Barry 1984:32). Throughout the 1840s into the 1850s government supervisors continued to reorganize the daily customs of workers and reconstructed the factory. By 1854, 25 new structures were built, all within a unified architectural plan (Smith 1977:275-76).

By the 1850s, Harpers Ferry was a sprawling industrial town containing the United States Armory and Arsenal along with private enterprises such as a textile mill, flour mill, saw mill, iron foundry, machine shop, carriage manufactory, as well as over 40 mercantile shops (Gilbert 1984:1). An 1855 account described the town:

> The village is compactly, though irregularly built around the base of a hill, and is the center of considerable trade. It contains four or five churches, several manufactories and flour mills, a United States armory in which about 250 hands are employed, producing, among other articles, some 10,000 muskets annually, and a national arsenal. In the latter are continually stored from 80,000 to 90,000 stand of arms [Edwards in Noffsinger 1958:43].

After the Civil War commenced and Virginia seceded from the Union, seizing the armory and arsenal at Harpers Ferry became a major objective for the Confederacy. Captain Jones, stationed at Harpers Ferry with 50 regulars and 15 volunteers, feared that an advancing force of 360 Confederates would capture the town. Before these forces arrived on May 18, 1861, Jones set fire to the Federal buildings and abandoned the town. The arsenal, along with 17,000 guns, was destroyed. Machinery from the armory was saved and shipped to Richmond, where it was used to make arms for the South (Noffsinger 1958:45-46). During the Civil War, Harpers Ferry changed hands eight times and all of the armory buildings and most of the private industries were destroyed.

The War Department decided not to rebuild the Harpers Ferry Armory because of the relatively high cost of arms production. In 1868, Congress passed an act to sell public lands, buildings, machinery and waterpower privileges at Harpers Ferry. The following year some properties were sold at four to five times their true value on easy credit with no cash down (Chickering and Jenkins 1994; Fisher et al. 1991; Snell 1979:32-48).

Industry never fully revitalized in Harpers Ferry. Disastrous floods in 1870 and 1877 accelerated the deterioration of lower town Harpers Ferry. Many of the buyers from the 1869 government auction filed applications for abatement, claiming they had paid inflated prices and that their new, flood-worn property had lost considerable value. An act of Congress on June 14, 1878, allowed purchasers of lots to make application for abatement as part of their 1869 bids. Twenty-nine purchasers who had originally paid a total of $39,755 for their properties were abated to $9,668.35. Other government sales in the 1880s disposed of the remaining government lands (Snell 1979).

Waterpower had been the catalyst for much of the industrial growth prior to the Civil War and employed workers in the armory and in the private industries on Virginius Island. By the 1870s the flour mill was the only major industry operating in the community. In the 1880s William Savery from Delaware purchased the armory grounds on the Potomac River, and Upper Halls Island on the Shenandoah River, and established a pulp mill on each river. While Child and McCreight's flour mill discontinued operations in the late 1880s, the pulp mills existed into the twentieth century (Johnson and Barker 1992).

In this post-bellum era touring battlefields and other areas of historical importance became a popular recreational activity among Americans. Harpers Ferry became a popular tourist spot along the Baltimore and Ohio Railroad and the Chesapeake and Ohio Canal. Visitors comprised of either day travelers or those who owned or rented cottages. Tourist brochures described several important landmarks including the site of John Brown's fort, and the ruins of the United States armory (Joseph et al. 1993). Hotels, restaurants, and boarding house establishments thrived in the early twentieth century. By the 1930s and 1940s floods, and the depression left the town in a general economic decline.

ARMORY DWELLING CONSTRUCTION AND PARK BUILDING 48

Armory Dwelling Construction

Since the first decade of the nineteenth century the government was faced with a severe housing shortage for its craftsmen. The workforce expanded at a far greater rate than dwellings could be built. Opportunities for workers to build their own dwellings was limited as the Wager family held a monopoly on all of the privately owned land in town, while the United States Government owned the rest of Harpers Ferry. In 1810, Paymaster Annin wrote to the Secretary of War that the second floors of several of the workshops were serving as lodging for some of the workers (Secretary of War, letters Received 1810: A-29 (5)).

An 1810 accounting of armory dwellings on armory land listed 33 households inhabiting 14 structures of various sizes on armory lands. In 1811, six houses were built by the government on public lands. From 1812 through 1815, the Harpers Ferry armory was prohibited from building armory dwellings due to financial restrictions imposed by Congress. Workers continued to use workshops as lodging and the paymaster protested these conditions as "some good mechanics have left us, meeting with better accommodations elsewhere, especially Pittsburgh" (2 November 1813, HF NHP Reel 13, Vol 1:31-32). Some federal appropriations became available in 1816, but no other funding existed for the rest of the decade. Apparently, when Superintendent Stubblefield was faced with a growing workforce, he permitted employees to construct dwellings on government land. During the 1820s, Stubblefield was confronted with the task of settling armorer's claims for repairs, additions, and construction. In the meantime 25 more, privately built armory domiciles were constructed on government land. By the 1830s, the government prohibited the private construction of any new dwellings on government land (Snell 1958, 1981a, 1981b).

Since armory rent rolls are incomplete, or unavailable prior to 1841 and after 1852, it is sometimes difficult to follow structural alterations with the different occupants. The armory's numbering assignments to armory houses changed several times during the first half of the nineteenth century. Armory superintendent Stubblefield used one numbering system, the government controlled armory used another scheme after 1841 (Bumgardner 1991; Snell 1981a). This renumbering has sometimes made matching houses with the varying number systems confusing.

Park Building 48 stands as a two-story plus attic, stone structure on the north side of Shenandoah Street. It occupies the eastern portion of Lot 2 and stands 19 ft along Shenandoah Street east-west, and runs 33 ft north-south. The original building, constructed in the 1820s, measures 19 ft east-west by 15.5 ft north-south. These dimensions closely match the 16 ft by 19 ft structure built by William Smallwood listed in a report by Armory Superintendent Rust in 1831. The dwelling is also listed as having several associated outbuildings including a log house, bake oven, smoke house, privy, stable, and fence (Bumgardner 1991: 10-11; Snell 1980a:28-29). Since no claims were placed for dwelling repairs and additions in 1832, and no repairs were done after 1852, it is most likely that, during the 1830s or 1840s, a 17.5 ft by 19 ft addition was constructed on the north side of the building.

Bumgardner notes that Park Building 48 was either Armory Buildings 30 or 32 (according to the 1841 numbering system). Rent rolls from 1841 to 1852 indicate that Armory Building 30 consisted of a single family dwelling, while Armory Building 32 was converted to a duplex between 1841 to 1844. A two story east wing addition on Park Building 48 measures 20.25 ft by 17.5 ft (Bumgardner 1991:1). Archeological investigations indicate that the addition was constructed during the 1840s and corresponds closely with the documentation on the Armory Building 32 duplex addition. Therefore, we can relate the Armory Dwelling 32 occupants to the Park Building 48 occupational history with a relatively high degree of confidence the following is a history of the building's occupants.

Park Building 48 Social History

William Smallwood constructed Park Building 48 in the 1820s, although there are no historical data that definitely places the Smallwood family, or any other specific armory worker's family, in Park Building 48 before 1841. Since the structure was located on armory land it is probable that Smallwood, or other armory workers and their families, inhabited the structure from the 1820s until the outbreak of the Civil War.

In 1832, Smallwood purchased a large tract of land in an area today known as Bolivar Heights for $2,400 (Bumgardner 1991:15). This sum seems rather large for an armory worker and little evidence exists as to where the Smallwood family gained the capital to buy the property. Whatever the case, it appears that the Smallwood family was financially secure, especially after William became active in local politics. The *Virginia Free Press* (*VFP* 5 July 1832:3) listed Smallwood as a candidate for alderman in the town of Bolivar. Smallwood was also listed as a Harpers Ferry representative at a Democratic Republican convention held in Martinsburg (*VFP* 7 March 1839:2; VFP 4 April 1839:1). In 1852, Smallwood was again involved in local politics as a candidate for district commissioner (*VFP* 13 March 1852:3; also see Bumgardner 1991).

The earliest surviving rent rolls date to March 1841 and place armorer Augustus Shope and his wife Catherine in Park Building 48. Shope's exact ties to the armory are unclear, although he attended an armory dinner and served on a committee to investigate the controversial hiring and firing practices of Superintendent Lucas. The rent rolls listed the Shopes as having paid a relatively high rent for a Shenandoah Street residence. Archeological evidence indicates that an east wing was constructed on Park Building 48 in the early 1840s. The higher rent may be related to the construction of this wing which Catherine Shope probably used to run a boarding house. The Shopes lived in Park Building 48 until Augustus' death (Bumgardner 1991:24). Catherine probably moved her boarding house to Michael Melhorn's former residence where she was capable of accommodating 10 or 12 boarders (*VFP* 14 March 1844:3). Melhorn probably moved into Park Building 48 between April and September of 1844 (Bumgardner 1991:25).

Park Building 48 served as a duplex after Melhorn moved out. The rent rolls show the John Berlin and the James Y. O'Laughlin families sharing the structure in December of 1844 (Bumgardner 1991:26). John Berlin worked at the armory from 1836 until its destruction in 1861, as a "jobber" through at least 1840, and later as "assistant jobbing smith." He resided in part of the duplex from 1844 to 1849 (Bumgardner 1991:26-27). Berlin was apparently married twice, first to either Mary Wrinkle or Mary Emis in 1843 (*VFP* 26 October 1843), and later to Elizabeth Deck in 1851 (Bumgardner 1991:27). It remains uncertain whether either of these marriages produced any children.

Historical data is somewhat lacking on the family of James Y. and Pleasant O'Laughlin. It is known, however, that they resided in Park Building 48 from 1844 to 1846 (Bumgardner 1991:28).

After the O'Laughlins moved out of the duplex, William H. Wentzle, an armorer, and his family replaced them, living adjacent to the Berlin family. William and Mary Wentzle and their two children lived in the dwelling from 1846 to 1849 (Bumgardner 1991:29). William was an officer in the local Sons of Temperance division (Bumgardner 1991:30).

John Roderick and Armistead Ball and their families replaced the O'Laughlins and Berlins in 1849 as residents of Park Building 48. Very little information exists on armorer John W. Roderick and his family. It is known, however, that along with his wife Artridge and their son John, they lived in the building until 1849 (Bumgardner 1991:30).

Armistead Ball married Hannah Hayman in 1839 (*VFP* 31 October 1839:3). By 1850, Armistead and Hannah, along with their two children, George, 10, and Randolph, 2, were living in Park Building 48 (Bumgardner 1991:32). Armistead Ball was evidently a valuable employee at the armory. He was considered a fine mechanic, promoted to master machinist in 1849 and to master armorer by 1859 (Smith 1977:247,248).

Armistead was fairly active in community events, special interest groups, and local politics in Harpers Ferry. His involvement in local meetings included topics ranging from the organization of a Lyceum and Polemic society set up as a forum for public lectures, to a relief fund for peoples of Ireland, to the organization of a complimentary dinner held in Harpers Ferry (*VFP* 30 November 1843:2; *VFP* 25 February 1847:1; *VFP* 24 March 1853:2). Ball also became involved with the temperance movement (*VFP* 31 August 1843:3) and local politics. He represented the Harpers Ferry precinct in a Democratic meeting held in Charles Town (*VFP* 19 February 1852:2). He also became a candidate for the District 8 Magistracy in 1852 (*VFP* 27 May 1852:2). The Ball family lived in Park Building 48 until 1852.

Because armory records were destroyed, it remains impossible to determine the residents of Park Building 48 from 1853 to 1861. An 1862 account of the armory dwellings indicates that Joseph Manuel resided in the structure (National Archives RG156 2, Letter received). Isabella and Benjamin F. Leisenring obtained possession of the property at government auction in 1869. In 1880, local merchant Gabriel L. Myers assumed control of Park Building 48 (Bumgardner 1991:32-37). One year later the property was purchased by Margaret and Michael Dempsey (Bumgardner 1991:39). That same year, Michael Dempsey, who was a Baltimore & Ohio Railroad employee, died (*Spirit of Jefferson* (*SoJ*) 8 November 1881:3). It seems likely that Margaret had moved out of the house by 1886 (Bumgardner 1991:40).

A number of individuals may have lived in the structure from 1886 until the National Park Service assumed control of the property in 1953. One of the families associated with Park Building 48 during this period was the Eugene Shugart family.

The Shugart family purchased the property in 1907, although they probably never lived there but rented it out to tenants (Bumgardner 1991:42). A good deal of historical data exists concerning Eugene Shugart. The family owned a number of properties and was fairly prominent in early twentieth-century Harpers Ferry. Eugene held a number of public offices during the early twentieth century including five terms as mayor of Harpers Ferry (*SoJ* 9 January 1906:2). It remains unclear who was actually living in the house while the Shugarts owned it. By 1953, the National Park Service assumed control of the Park Building 48 and has continued to rent the structure to local families and later to park employees. This practice continues the long tradition of the building's use as a tenement since the first half of the nineteenth century.

CHAPTER 3

SUMMARY OF EXCAVATIONS AT PARK BUILDING 48

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and
Cari YoungRavenhorst

METHODOLOGY

Three goals directed the excavation strategy for Park Building 48, Package 118: 1) to aid architectural historians; 2) to provide a diachronic analysis of the changing physical and cultural landscape; and 3) to contribute to the interpretation of nineteenth-century domestic life among armory workers in Harpers Ferry.

First, excavations provide specific information about the general dimensions and construction techniques of the existing structure. The remains of the east wing foundation initially guided investigations to determine the articulation between this feature and the existing structure. Excavation units were also placed adjacent to the Park Building 48 in order to discern the different building phases and additions to the original house. Input from architects and historians provided direction to discern information pertaining to building construction sequences.

Second, excavations contribute to the analysis of the changing cultural landscape. Initial archeological research utilized historic maps, such as those developed by the government in the antebellum era, as well as fire insurance maps and railroad maps. Archeology can reveal the presence of previously undocumented features such as entranceways, structural additions, fencelines, walkways, location of outbuildings, and the historic grade. Pollen and phytolith analyses enhanced the interpretation of the changing landscape of the surrounding yards by determining the presence, extent, and duration of vegetative growth.

Third, using the initial data provided for the architectural and cultural landscape questions, a block excavation was conducted just south of the east wing extension. This area contained continuously undisturbed deposits from the earliest armory occupation through the turn of the twentieth century. This locality yielded a large quantity of domestic and work related objects from an armory worker's occupation and contributes significantly to the interpretation of early nineteenth-century social and economic relations in Harpers Ferry. Archeological data helps examine the acceptance rate of new consumer goods and cultural ideas by armory workers in the first half of the nineteenth century and provides information regarding the changing lifeways of residents after the Civil War.

Excavation Strategy

A five foot grid was placed over the project area. Each excavation unit was identified by coordinates assigned to its northeast corner (i.e. N520 E500) as well as a unit number (i.e.

1, 2, 3. . .), assigned in the order that the units were excavated. All units were excavated according to natural and cultural zones of deposition and each stratum was assigned to one of the stratigraphic layers (megastrata). Each megastratum was designated by Roman Numerals (i.e. I, II, III...) and represented a specific chronological and cultural layer, with megastratum I containing the most recent deposits (Appendix I) (Table 3.1).

Excavations were conducted by troweling and shovel skimming. All of the soil was screened through a 1/4 in mesh screen. All artifacts were cleaned, labeled, and cataloged at the archeology laboratory at Harpers Ferry National Historical Park. Artifacts are stored at the Museum and Artifact Regional Storage facility in Lanham, Maryland, and are accessible for further evaluation. Elevations were taken in relation to the USGS marker on the southeastern corner of Park Building 36, the new master armorer's house, which measured 275 ft above mean sea level (amsl).

Cataloging was performed by using the Automated National Cataloging System (ANCS). Based on the current National Capital Region cataloging system, artifacts were classified by material rather than function (Appendix II). Other analyses were performed outside of the ANCS data base and include a minimum vessel analysis for glass and ceramics (see Chapter 5) and a faunal analysis (see Chapter 7).

Table 3.1. Chronology associated with megastrata.

MEGASTRATUM	DATE
I	Late twentieth century
II	Late nineteenth\early twentieth century
III	Mid-late nineteenth century
IV	1830s
V	Late 1820s to 1830s
VI	1820s
VII	1810s to 1820s

STRATIGRAPHIC ANALYSIS

A total of 15 excavation units were dug around Park Building 48 of which 11 were placed directly adjacent to the existing structure or the east wing foundation (Figure 3.1). The remaining four excavation units were placed in the east and west yards. All of the excavation units' stratigraphy, features, and artifact assemblages are described together by megastratum. These deposits are categorized in this fashion because they contain similar stratigraphic deposits,

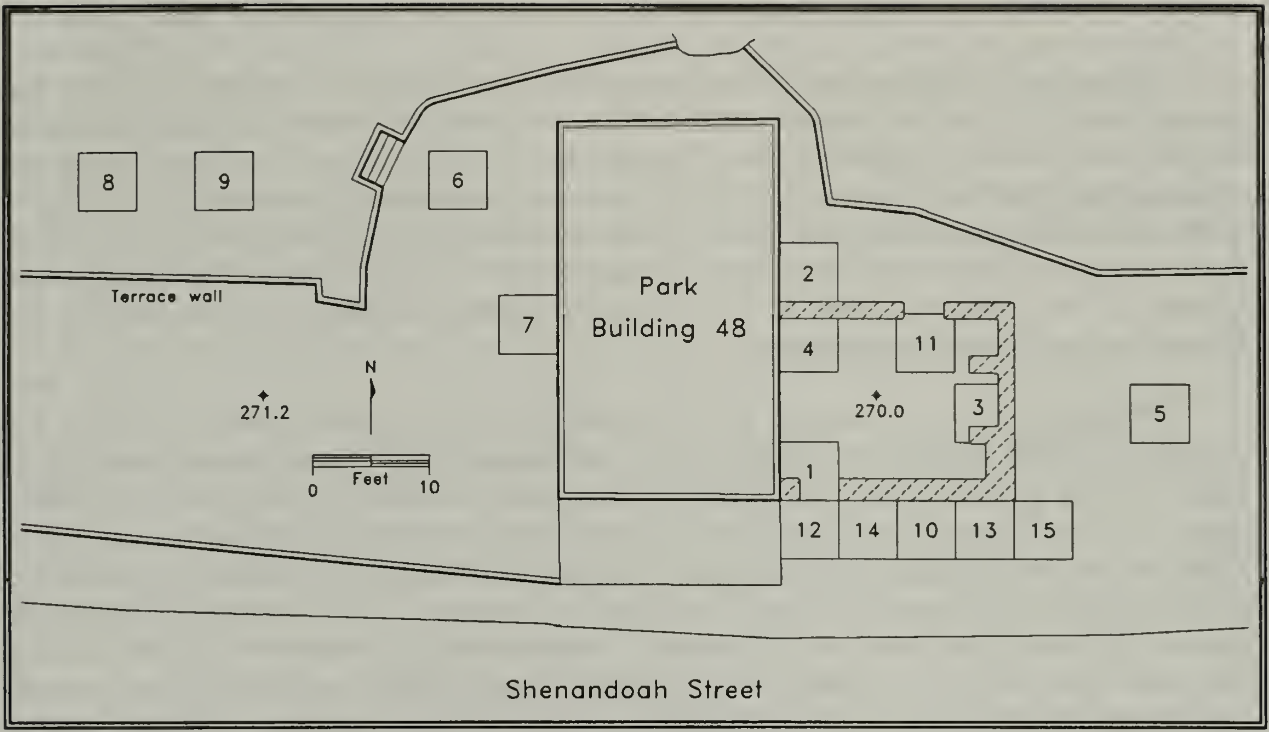

Figure 3.1. Map showing Park Building 48 with excavation units.

as well as provide evidence for some general trends regarding the changing backyard uses during the nineteenth and early- to mid-twentieth centuries.

East and West Yard Excavation (Excavation Units 1-7, 10-15)

From the early nineteenth century to the outbreak of the Civil War, Park Building 48 probably served as the residence for armory workers. During the 1840s, the armory added the east wing to the house and the structure probably served as a duplex that housed the families of armory workers. After the Civil War the government auctioned the structure to a private citizen and it was used as a tenement through the rest of the nineteenth and early- to mid-twentieth centuries. The stratigraphy and the excavated materials from the east and west yards provide a diachronic view of the cultural and stratigraphic changes over 100 years.

West Yard Upper Terrace (Excavation Units 8 and 9)

The west yard upper terrace began about 30 feet north of the northern edge of Shenandoah Street and its eastern boundary stood about 17 ft west of Park Building 48. The terrace wall consisted of about 2.5 to 3.0 ft of dry laid shale. Its northern boundary intersected the sloping hill to the north. Excavations provided clues that the terrace construction probably occurred in the late nineteenth or early twentieth centuries. It contained outbuildings as well as a late twentieth-century privy.

Late Twentieth-Century (Megastratum I -- East and West Yard Excavations, Upper Terrace)

Stratigraphy. Megastratum I consisted mainly of a dark brown (10YR 3/3), very dark grayish brown (10YR 3/2), and a brown-dark brown (10YR 4/3) soil and had a texture that ranged from loam to a clayey loam. The area immediately adjacent to the east wing also contained a dark yellowish brown (10YR 4/4) sand and a pea gravel. The average top elevation in the yard excavations measured 269.87 ft amsl and the layer continued for about 1.1 ft. In the upper terrace the average top elevation measured 274.62 ft amsl and had an average depth of about 1.6 ft. The layer dated to a late twentieth-century occupation and the National Park Service's ownership of the property.

Features. Feature 1 was the shale foundation constructed in the 1840s as an east wing extension for Park Building 48 (Figure 3.1). The National Park Service reconstructed the top 1.0 to 1.5 ft of the wall in the 1960s, probably raising the foundation's elevation for interpretive purposes. The existing wall has two doorway openings, one in the north and the other in the south foundation, although no sill remains. The present doorway is a modern creation as no evidence exists to determine the original location of a doorway. The lower wall, untouched by restoration, dates to the 1840s and originated in Megastratum IV. Feature 4, a 1.0 in diameter iron water pipe, and its associated trench, Feature 5, impacted the south wall of the foundation and the soils in Excavation Units 1 and 12.

Feature 13 was found in Excavation Unit 6 on the west side of the house and its exact function is unknown. The feature consisted of one course of shale paving, one foot wide, perpendicular to the structure, and may have served as a footing for one of the house additions. The top of the feature measured 270.44 ft amsl.

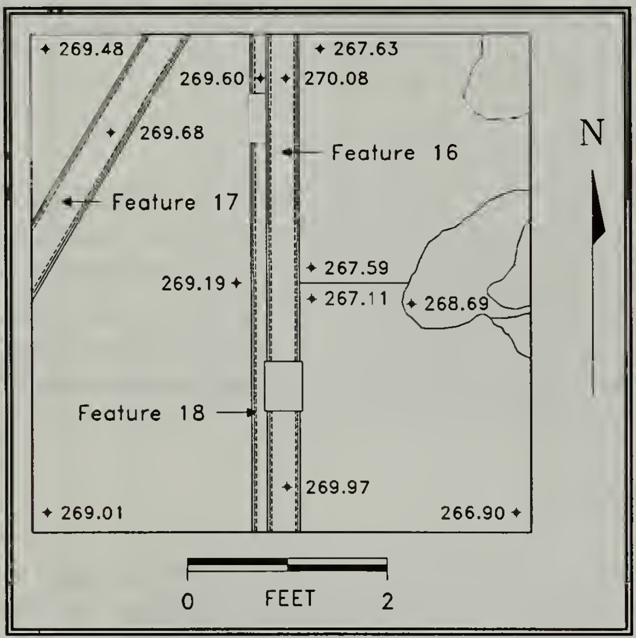

Figure 3.2. Excavation Unit 7, Features 16, 17, and 18. Pipes on the west side of Park Building 48.

Feature 17 was a 0.4 ft metal pipe that ran from southwest to northeast in Excavation Unit 7 on the west side of Park Building 48 (Figure 3.2). The feature, installed by the National Park Service in 1972, probably connected the house to the septic tank. The top of the feature measured 269.67 ft amsl and ended at a depth of 269.30 ft amsl. Feature 15 was the associated pipe trench for Feature 17. The trench consisted of a brown, dark brown (10YR 4/3) sandy silt and contained a mix of nineteenth- and twentieth-century artifacts. The top of the feature measured 270.34 ft amsl and ended at 269.30 ft amsl.

Features 16 and 18 (Figure 3.2) were two four inch PVC pipes that ran in a north to south direction and paralleled Park

Building 48 in Excavation Unit 7. These are both related to the National Park Service's renovations in the late 1970s. Feature 16 appeared at 270.02 ft amsl and was contained by a pipe trench, Feature 14. This trench had two distinctive layers. Layer 14A included a dark brown (10YR 3/3) loam and was located at 270.41 ft amsl and continued for 0.3 ft. Layer 14B contained pea gravel from 270.14 ft amsl to 269.64 ft amsl. Feature 18, the PVC pipe, appeared at 269.55 ft amsl and was contained by Feature 19, a pipe trench. This feature contained a brown-dark brown (10YR 3/4) silty loam and was found immediately below Feature 14B. Its top elevation measured 269.60 ft amsl and ended at about 269.21 ft amsl.

Feature 23 consisted of a one course thick shale foundation that ran in an east to west direction in Excavation Unit 8 (Figure 3.3). The top of the feature measured 274.04 ft amsl and was no more than one foot wide. The feature was placed directly on the ground surface rather than in a builder's trench. The foundation probably supported a small structure like a shed.

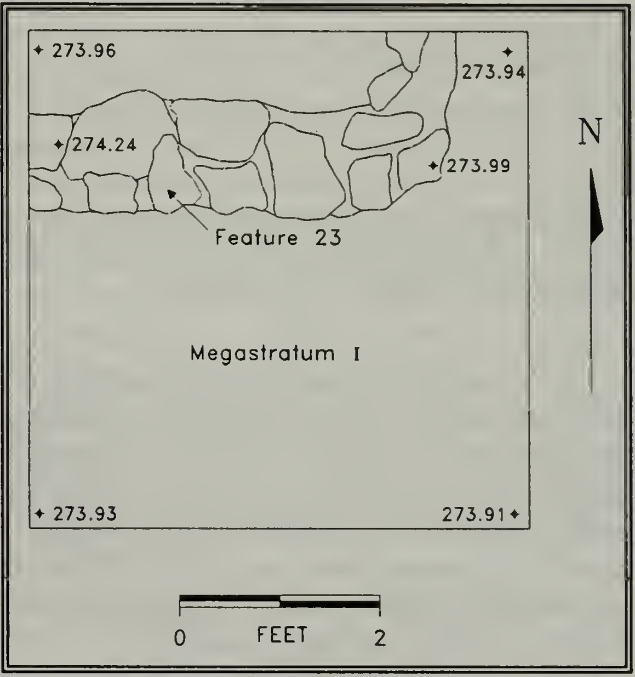

Figure 3.3. Excavation Unit 8, Feature 23. One course thick shale foundation.

Feature 24 contained mortar, shale spalls, and sand from a modern repointing trench (probably 1960s) adjacent to the southern wall of the east wing addition in Excavation Units 10, 13, and 14. It was about 2.0 ft wide and the top of the feature measured 268.53 ft amsl and continued for 0.5 ft. The new mortaring of the south wall ended at the bottom of the trench. Most of the materials found in the feature included twentieth-century materials.

Feature 25 consists of one course of shale slabs and brick edging running in an east to west direction in the southern parts of Excavation Units 10, 13, 14, and 15 (Figure 3.4). The average top elevation measured 268.28 ft amsl and continued for 0.2 ft amsl. The shale slabs were firmly implanted in the southern wall of the unit, therefore the width of the feature was undetermined. Feature 25 probably served as a walkway or some other landscape feature.

Artifacts. Megastratum I yielded 801 ceramic sherds. Well over half of these sherds were whiteware (64.3%, n=515). Other earthenware sherds (27.7%) consisted of pearlware (n=97), creamware (n=12), red paste (n=93), and other color or unidentified white paste earthenware (n=20). Porcelains comprised 5.2% of the assemblage and included hard paste (n=34) and other identified porcelain types (n=5) and unidentified porcelains (n=3). The remaining 2.7% of the assemblage was American Gray and buff paste stoneware (n=22).

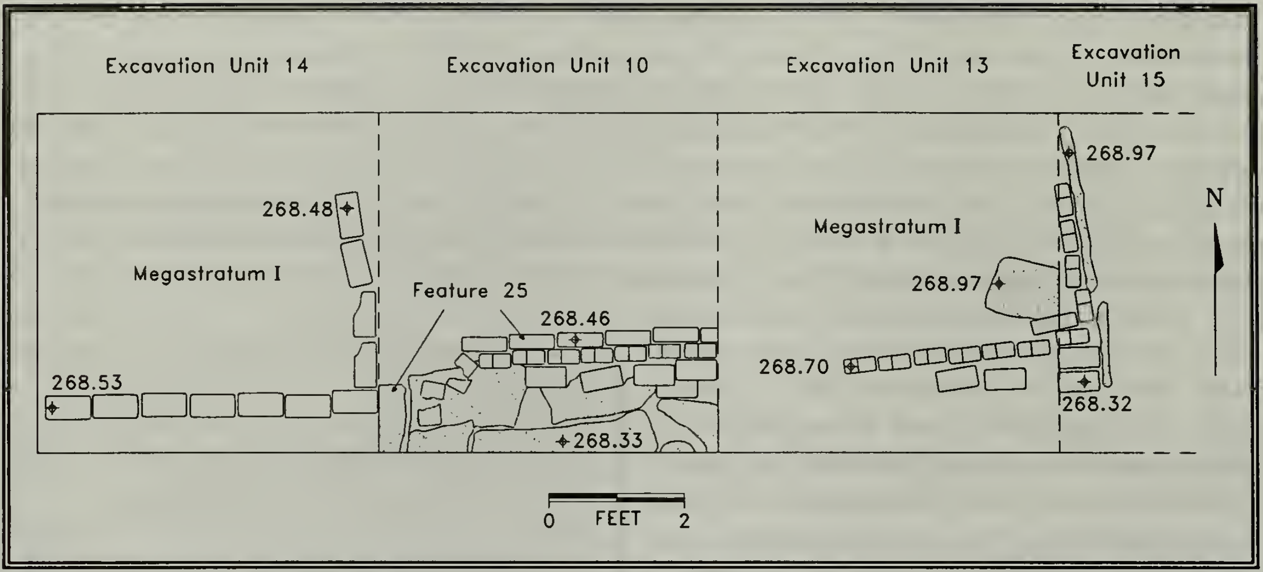

Figure 3.4. Excavation Units 10, 13, 14, and 15, Feature 25. One course of shale slabs and brick edging running east to west.

A ceramic minimum vessel analysis identified 86 vessels (see Lucas this volume). More than half of the identified vessels were tableware (40.7%, n=35) and teaware (16.3%, n=14). Almost 90% of the tablewares were whiteware (88.6%, n=31), including four vessels of hard paste ironstone whiteware. Other ware types present in the tableware included pearlware, hard paste porcelain and tin glazed majolica ware. Vessel forms of the tableware consisted of plates (n=27) of various sizes from 6" to 10" in diameter, bowls (n=5), a baker, a tureen and an unidentified flatware vessel. Decorative techniques on the tablewares included gilding, molding, transfer printing and decalcomania.

Over 70% of the 14 teaware vessels were whiteware saucers (71.4% n=10). The other teaware vessels were comprised of two whiteware cups, one pearlware cup and one creamware cup. Decorative techniques of the teaware also included decalcomania and transfer printing.

Megastratum I produced six flower pots and eight vessels for storage/utilitarian usage. These vessels consisted of four yellowware bowls, one stoneware bottle and three stoneware lids.

Almost 25% (24.4%) of the vessels identified consisted of unidentified hollowware (n=13) or unknown (n=8) forms. Ten of these vessels were whitewares with various decorative techniques and eight more were of other refined paste earthenware types such as bone china (n=2), hard paste porcelain (n=5) and chinese porcelain (n=1). Only three of the unidentified hollowware vessels were of coarse earthenware.

The largest material assemblage recovered from Megastratum I was glass. Over half of the 5532 glass artifacts cataloged were container glass (53.2%, n=2944) and another third were flat glass fragments (35.6%, n=1945). Identified manufacturing techniques for the container glass included two-piece molds with cup bottoms and automatic machine molded. Finish types included threaded, crown, and anchor closures. The next largest component of the assemblage (8.4%) was unidentified objects (n=2) and unidentified glass fragments (n=463). The balance of the collection consisted of tableware (n=93), lighting glass (n=48), and identified glass items. Some of these items were beads, mirror glass, vials, and a thermometer.

Minimum vessel analysis of the glass assemblage identified 113 vessels consisting of bottles (n=71), jars (n=9), tableware (n=19), lamp chimneys (n=4), unidentified containers (n=6), vials (n=2) and warranted flasks (n=2). Of the 71 bottles, over half (n=42) were automatic machine molded. Manufacturers identified by bottle marks included Hazel Atlas, Anchor Hocking, Owens Illinois Glass Company, Reed Glass Company and Whitehall Tatum. Contents were identified for some of the bottles and included snuff, perfume and soda (Pepsi-Cola, Coca-Cola, Dr. Pepper, Ginger Ale, Mountain Dew) and beer. The tableware vessel identified forms included dishes (n=4), glasses (n=5) and tumblers (n=4).

Nails (43.4% n=1188) were the largest component of the 2734 cataloged metal artifacts. Container fragments comprised 13.7% (n=375) of the assemblage and included fragments of ferric, aluminum or white metal cans (n=291) and various bottle caps, lids and pull tabs (n=82). Another 13.3% of the collection consisted of unidentified objects (n=65) and fragments (n=297). The balance of the assemblage contained hardware/tools (n=127) and various identified items. These identified items included clothing related artifacts such as eyelets and buckles, several types of ammunition, electrical accessories and automotive parts.

Personal artifacts cataloged in Megastratum I included jewelry, eyeglass frames and lenses, bandages, a prophylactic wrapper and a lipstick tube. Artifacts made of synthetic materials included a rubber garter hook, panty hose, hair combs, cellophane wrappers, styrofoam, several shoe parts of rubber and an upper plate of dentures. Over one-third of the 75 buttons recovered were shell (n=28), with decreasing amounts of glass (n=16), porcelain (n=14), man made materials (n=8), metal (n=5) and bone (n=4). A jaws harp, marbles of glass (n=11), clay (n=6) and stone (n=5) and a bone domino were among the toys recovered. Five pennies were found with dates ranging from 1920 to 1979.

Faunal materials recovered from Megastratum I consisted of clam, oyster and egg shell, several pieces of leather and 258 bone fragments. Over 85% of the bone fragments were mammal (85.6% n=221). Most of the remaining bone was avian (12%, n=31). The balance of the assemblage consisted of fish bone (n=4) and unidentified bone fragments (n=2).

Late Nineteenth/Early Twentieth Century (Megastratum II -- East and West Yard Excavations)

Stratigraphy. Megastratum II mostly contained a very dark grayish brown (10YR 3/2) and a dark grayish brown (10YR 4/2) silty loam. The top elevation measured 268.71 ft amsl and its depth averaged 0.5 ft. This stratum included materials from the late nineteenth to early twentieth century, an era when the structure was used as a tenement.

Features. Feature 9 consisted of brick flooring remains in Excavation Unit 3, the interior of the east wing. The feature is related to the twentieth-century occupation of Park Building 48 when the east wing was solely used for utility purposes rather than for habitation. The top of the feature was found at about 269.41 ft amsl, or 0.5 ft below the surface.

Artifacts. Megastratum II yielded 269 ceramic sherds. Whiteware sherds were 42.7% (n=115) of this total with pearlware sherds being 30.5% (n=82) and red paste earthenware being another 11.1% (n=30). Other earthenware sherds recovered included creamware (3%, n=8), color paste (1.5%, n=4), and unidentified white paste (0.4%, n=1). The remainder of the assemblage was porcelain (8.5%, n=23), bone china (0.4%, n=1) and stoneware (1.9%, n=5).

A ceramic minimum vessel analysis identified one toy saucer and 22 other vessels (see Lucas this volume). Tableware forms were 22.7% (n=5) of these vessels and included three plates, one bowl and one piece of flatware. All of these vessels were whitewares. Teawares comprised 41% (n=9) of the total vessels and teaware forms included three teacups and two sauces of whiteware, two handled teacups and two saucers of porcelain. The decorative techniques for these table and teawares consisted of molding, transfer printing, painting, gilding, and sprig application.

Storage/utilitarian wares included one yellowware bowl and three stoneware lids. There were also four unidentified hollowware vessels defined. Three were whitewares either undecorated (n=1) or transfer printed (n=2). One other vessel identified was a coarse earthenware with a white slip.

Glass fragments comprised the largest assemblage in Megastratum II and consisted of 1384 pieces. Over 75% of these artifacts were flat glass (54.8%, n=758) or container glass (38.8%, n=537). Unidentified glass objects (n=2), unidentified fragments (n=49), and miscellaneous identified glass artifacts (n=38) completed the assemblage.

A glass minimum vessel analysis produced 25 vessels. These vessels consisted of jars (n=2), bottles (n=22), and one piece of unidentified hollowware. The two jars were automatic machine made with threaded finishes. Only five of the bottles were automatic machine made. One of these was a colorless Pepsi-Cola bottle with a crown cap finish. Two of the others had threaded finishes. Two of the automatic machine made bottles had marks identifying the manufacturers. One manufacturer was the Illinois Glass Co. and probably dates from 1861 to 1929 (Toulouse 1971:264), and the other was Owens Illinois Glass Co. and dates from 1929 to 1954 (Toulouse 1971:403).

Only eight other bottles had identifiable manufacture techniques. One olive bottle was made in a three-piece mold with a cup bottom. This bottle is embossed on the base "SAXLEWNERS BITTERQUELLE/HUNYADI/ANOS" and had a manufacture date of 1863 to 1900 (Toulouse 1971:257-258). Two medicinal bottles of aqua glass were produced in two-piece cup bottom molds. Both of these bottles possessed patent/extract type finishes. The remaining five bottles consisted of aqua glass and were produced in two-piece cup bottom molds. These five bottles had blob top swing-stopper finishes and were embossed with the logo of a local brewer, J.C. McGraw, in business from 1893 to 1897 (Hull-Walski and Walski 1992:15.24). Identified finish types on the rest of the bottles included brandy (n=2), threaded (n=2), and perry davis (n=1). One of these remaining bottles was a light green Coca-Cola bottle.

Of the 1002 metal artifacts recovered from Megastratum II, 61.1% (n=612) were nails. Unusual items included in the hardware and tools (4.5% n=45) were two bench dogs, a hatchet head, and a flue damper. Container fragments, including swing type stoppers, crown caps and lids, were 20% (n=200) of the assemblage. Unidentified fragments (n=69) and objects (n=39) consisted of only 10.8% of the assemblage. The rest of the cataloged metal artifacts were comprised of various identified items. Some of the more unusual included a combination tool for gunsmithing, two ram rods, four table utensils/handles, straight pins and a shutter dog.

A doorknob of leaded, frosted glass, pieces for a harmonica, a skeleton key, and the lens from a pair of eyeglasses were among some of the items recovered from Megastratum II. Other personal items included pieces of a watch crystal, fragments of ball clay tobacco pipes, pieces of combs (1 bone lice comb, 1 plastic, and 1 bakelite), a pocket knife blade, clothing items, and coins. The clothing items consisted of a garter clasp, parts of hook-and-eyes, shoes and 37 buttons of bone (n=4), shell (n=10), glass (n=7), metal (n=6), porcelain (n=7), bakelite (n=2) or plastic (n=1). The two coins recovered were both pennies, one dated 1888 and the other dated 1916.

Several toys were cataloged within this megastratum. Most were marbles (n=21) of ball clay, unidentified clay or porcelain. Another six marbles were made from ground/tumbled marble or other calc-silicate stone. The last three marbles were of glass and contained twisted strands of colored glass. There was one toy saucer of porcelain identified during the minimum vessel analysis of the ceramic sherds. Two other toys were recovered, both of bone. One is a domino and the other is the carved base for a gaming piece, probably a chess piece.

The 361 bone fragments cataloged in this megastratum were more than 80% mammal (82.5% n=298). Other faunal material cataloged included avian bone (16.1% n=58), fish bone (1.4% n=5) and shell.

Mid-Late Nineteenth Century (Megastratum III -- Upper Terrace)

Stratigraphy. Megastratum III underlaid Megastratum I. The soil contained a dark yellowish brown (10YR 5/4) silty loam. The average top elevation measured 272.96 and had a depth of about 1.3 ft. It contained late nineteenth and early twentieth-century artifacts and may have consisted of fill used to build the terrace.

Artifacts. Of the 178 ceramic artifacts recovered from Megastratum III, most were either red paste earthenware (45%, n=80) or whiteware (43.2%, n=77). The remaining sherds were yellowware (9%, n=16), pearlware (2.2%, n=4) or color paste earthenware (0.6%, n=1).

A ceramic minimum vessel analysis identified nine vessels (see Lucas this volume). These vessels included four whiteware plates, two with transfer printed decoration, one with a blue shell edge and one undecorated. One other piece of whiteware was identified -- a saucer with a green painted decoration. There were also two unidentified hollowware forms of ironstone and one of rockingham/bennington recorded in this megastratum. The final identified vessel was a cake mold of coarse earthenware.

Only 57 glass fragments were cataloged from Megastratum III. Most of these fragments were either container glass (45%, n=25), flat glass (33.3%, n=19), or unidentified glass fragments (19.3%, n=11) with nominal representations of tableware (1.7%, n=1) and unidentified glass objects (1.7%, n=1).

A glass minimum vessel analysis identified only three vessels. All three were identified as bottles but no manufacturing technique, manufacturer or bottler was identified for any of them. Two of the bottles were of colorless glass and one was aqua. The aqua bottle did possess a patent/extract finish and one of the colorless bottles had a ground lip.

Over half of the 37 metal artifacts recovered were unidentified nails (51%, n=19). Machine cut nails (n=3) and unidentified metal fragments (n=7) comprise another 27% of the assemblage. A ferric hinge and other unidentified objects complete the metal assemblage within this megastratum.

Personal items cataloged in this megastratum consisted of two cupric shank type buttons, one cupric clothing snap and one leather shoe.

1830s (Megastratum IV -- East and West Yard Excavations)

Stratigraphy. Megastratum IV consisted of a dark brown (10YR 3/3) and a dark yellowish brown (10YR 4/4) soil that ranged in texture from loam to a clayey silt. About 80% of the layer included shale spalls and may be related to rock quarrying and building in the immediate area. The layer dates to the 1830s and is related to armory workers' household activities.

Features. Feature 1 was the shale foundation constructed in the 1840s as an east wing extension for Park Building 48 (Figure 3.1). This addition created a duplex that housed armory workers and their families. Its top elevation measured about 270 ft amsl and continued to a depth of 264.68 ft amsl in the south and 268.39 ft in the northern portion of the foundation. The latter foundation rested on bedrock. The foundation dimensions were 20 ft east-west and 18 ft north-south and included a fireplace foundation in the eastern wall.

Feature 8 was the only builder's trench found for the east wing extension. The feature was located adjacent to the exterior portion of the northern foundation. The foundation's depth measured 268.39 ft amsl as it rested on bedrock. The top of the trench was found at 269.48 ft amsl and continued to a depth of 268.84 ft amsl. The soils consisted of a brown-dark brown (10YR 4/3) silty clay and materials in the trench dated to the first quarter of the nineteenth century.

Feature 10 contained several whole and partial bricks and mortar in Excavation Unit 3 and appeared to be related to an early nineteenth-century structure, possibly a fireplace. The top of the feature measured 268.61 ft amsl and ended at a depth of 267.57 ft amsl. Since the bricks and mortar were not articulated the feature may be a product of the demolition or the rebuilding of an earlier structure, or even the rebuilding of the fireplace. Feature 11 appeared to be the footing for the fireplace and the top was found slightly below Feature 10, at 268.41 ft amsl. The footing underlaid the foundation and the fireplace side walls and extended about 0.7 ft into the interior of the foundation.

Feature 22 consisted of a dry laid shale wall that ran perpendicular to Park Building 48 and abutted against its western wall in Excavation Unit 7 (Figure 3.5). The top of the feature measured 269.55 ft amsl and continued for 0.6 ft. Feature 22 construction most probably dates to after the construction of Park Building 48 and based upon associated artifacts the feature may date to as early as the 1830s. The wall's function is currently unknown, although it may have served as a foundation or landscaping feature. More extensive excavations in the area might provide additional clues.

Artifacts. Over half of the 1,821 ceramic sherds in Megastratum IV were pearlware (54.7%, n=997). Creamware (14.3%, n=261) and red paste earthenware (17.9%, n=326) consisted of another third of the assemblage. The balance consists of various porcelains (n=84), unidentified white paste earthenware (n=45), other refined earthenwares (n=7) and stonewares (n=5).

A ceramic minimum vessel analysis identified 98 vessels (see Lucas this volume.) Table and teawares accounted for 71 of these vessels, 31 tableware and 40 teaware. With the exception of four creamware plates and one plate of hard paste porcelain, all of the tablewares were pearlware. These pearlwares included two platters, 20 plates of various sizes, three bowls and one unidentified flatware. None of the creamwares or the porcelain plates were decorated, however, all but one of the pearlware plates were green or blue shell edged. One of the bowls had a blue transfer printed decoration and the other two had color glazes.

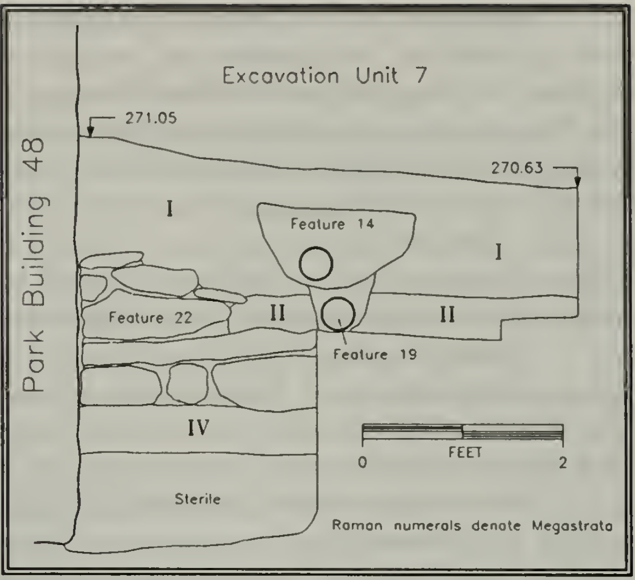

Figure 3.5 Excavation Unit 7, Feature 22. A dry laid shale wall that abuts the western wall of Park Building 48.

Of the 16 teacups, 14 were pearlwares with painted or transfer printed decorations under the glaze. The remaining two teacups were porcelain with decorations painted over the glaze. There were 22 saucers identified among the teawares. Eighteen of these saucers were pearlware, two were porcelain and two were creamware. Most of the saucers were either painted or had transfer printed decorations under the glaze. There were two creamers identified in analysis. One creamer was of undecorated creamware and the other was a yellow-glazed earthenware with a black transfer print design which dates to ca. 1815 (Miller 1991:101).

Nine of the vessels were storage/utilitarian wares. These included six crock/jars of coarse earthenware and three slipware pans. One flower pot was also identified.

Six vessels of unknown form and 10 unidentified hollowware forms were recognized during analysis. All of the vessels of unknown form were refined paste earthenwares, as were eight of the hollowware forms. Of the remaining two unidentified hollowware forms one was a coarse earthenware and one a gray bodied stoneware.

Of the 392 glass artifacts recovered from this megastratum, over half were flat glass (56.8%, n=222). Container glass fragments were another 35.3% (n=138) of the assemblage. Eight sew-through buttons and one milk glass hat pin head were 2.3% of the total cataloged glass. The balance of the assemblage consisted of unidentified glass (4.6% n=18) and tableware fragments (1%, n=4).

A glass minimum vessel analysis yielded 10 vessels, all bottles. Color of glass was the only distinguishing characteristic identified for six of these bottles. However, of the remaining four bottles were two alcohol bottles, one warranted flask (also alcohol) and one medicinal bottle.

More than 80% of the 698 metal artifacts were nails (83%, n=581). Most of these nails were unidentified, but machine cut, modern wire and hand wrought types were all present. Artifacts cataloged as hardware/tools included two files and one chisel. Unidentified fragments (n=35) and various identified (n=32) and unidentified (n=26) objects complete the assemblage. Among the identified metal objects were a thimble, a table knife, four coins and five buttons. All four of the coins cataloged were U.S. Large Cents with stamped dates ranging from 1820 to 1827. Four of the buttons were cupric or brass shank buttons and one was a sew-through button of white metal. One William's #3 type cleaning bullet was also cataloged in this megastratum, along with a brass cartridge case and a piece of lead shot.

Clothing related artifacts recovered from Megastratum IV included the metal and glass buttons discussed above, four sew-through buttons of other materials and various shoe parts. The other buttons consisted of two bone, one shell and one of white paste earthenware. The shoe parts included a cupric grommet, a heel plate and pieces of tanned leather.

Personal items found included 28 pieces of ball clay tobacco pipes, many decorated with molded motifs including flutes, leaves and alternating ridges and dots. The three combs found included two lice combs, one of bone and one of plastic. Other plastic items included various unidentified plastic fragments and electrical wire insulation. The only toy items recovered consisted of 12 marbles, nine of ball clay, two of porcelain and one of unidentified clay type.

Faunal materials cataloged included clam and oyster shell, leather and bone. The bone (100%, n=520) was 87% mammal (n=453) with another 12% being avian bone (n=64). Fish (n=2) and unidentified (n=1) bone were a nominal 1% of the total.

Late 1820s to 1830s (Megastratum V -- East and West Yard Excavations)

Stratigraphy. Megastratum V was found in the east yard excavation units adjacent to and south of the east wing foundation as well as in Excavation Unit 5 in the east yard. It laid immediately under the heavy concentration of shale and only consisted of about 10% shale. Its average top elevation measured 267.04 ft amsl and averaged about 0.5 ft in depth. Its soil consisted of a dark brown (10YR 3/3) and a very dark grayish brown (10YR 3/2) and had a texture that ranged from a loam to a silty loam. This layer dated to the late 1820s to the 1830s and is related to an armory worker's household.

Artifacts. Megastratum V yielded 500 ceramic sherds. Nearly half (48.8%, n=244) of these were pearlware sherds. Almost another third of the assemblage (31.6%, n=158) consisted of red paste earthenwares. The rest of the sherds consisted of creamware (11.4%, n=57), hard paste porcelain (6.2%, n=31) stoneware (0.6%, n=3), unidentified white paste earthenware (0.6%, n=3) and other porcelains (0.6%, n=3).

A ceramic minimum vessel analysis identified 36 vessels (see Lucas this volume). Over half (58%, n=21) of these vessels were tablewares (n=11) and teawares (n=10). The tablewares consisted of three creamwares and eight pearlwares. Identified forms included 10 plates (2 creamware, 8 pearlware) and one bowl (creamware). Decorative techniques for the pearlware pieces included transfer printing and shell edged. All of the creamwares were undecorated. The 10 teawares were equally divided between teacups (n=5) and saucers (n=5). Four of the teacups and four of the saucers were pearlware with painted or transfer printed decorations in a variety of colors. The remaining teacup and saucer were of porcelain with transfer printed decorations in blue and black.

Nine (25%) of the of the vessels were storage/utilitarian wares. Most of these vessels were crocks/jars (n=3) of coarse earthenware and slip decorated pans (n=4) of red paste earthenware. Two stoneware jugs were also identified. The last six vessels were unidentified hollowware forms of coarse earthenware (n=2), creamware (n=2), transfer printed pearlware (n=1) and green slipware.

Only 154 glass fragments were recovered from this megastratum. The overwhelming majority (85.7%, n=132) of these fragments were flat glass, followed by container glass (10.3%, n=16). Lamp chimney glass (2%, n=3) and unidentified glass fragments (2%, n=3) comprised the remainder of the assemblage. No glass vessels were identified in this megastratum during minimum vessel analysis.

Of the 164 metal artifacts cataloged in the Megastratum V assemblage, most (65.8%, n=108) were machine cut nails, but other types of nails were represented including hand wrought (n=5) and unidentified (n=26). One gunlock, one cupric shank button back, a straight pin and one piece of foil wrapper some of the other items cataloged. The balance of the metal assemblage was composed of unidentified ferric fragments and other identified metal objects.

Personal items included a sew-through shell button, the cupric button back mentioned above, and nine fragments of ball clay tobacco pipes.

There were 179 fragments of bone recovered form this megastratum. Nearly 90% (87.7%, n=157) were identified as mammal bone with most of the remainder identified as bird (11.2%, n=20). Unidentified bone (n=1) and fish bone (n=1) were a nominal 1% of the assemblage.

1820s (Megastratum VI -- East and West Yard Excavations)

Stratigraphy. Megastratum VI was located only in the excavation units adjacent to and south of the east wing extension (Figure 3.6). It included a very dark grayish brown (10YR 3/2) silty loam with a large percentage of mortar and brick fragments. This material may be the product of the destruction of the bakehouse to accommodate the placement of the east wing extension. The layer dates to the 1820s and is related to an armory worker's household.

Features. Feature 32 consisted of a shallow pit adjacent to the south wall of the east wing in Excavation Unit 14 and extended to 2.5 ft south of the wall. The top of the feature measured 266.30 ft amsl and continued for 0.35 ft. The pit contained artifacts dating to the 1820s as well as an abundance of charcoal flecks.

Artifacts. A total of 1400 ceramic sherds were recovered from Megastratum VI. Over half (55%, n=766) of these sherds were pearlware. Red paste earthenware was 28% (n=394) and creamware made up another 11% (n=153) of the assemblage. Various stonewares (n=6), whitewares (n=66), other paste earthenwares (n=8), and porcelains (n=7) completed the ceramic count.

A ceramic minimum vessel analysis yielded 89 vessels (see Lucas this volume). Over 75% of these vessels (76.4%, n=68) were table (n=29) and teawares (n=39). Identified

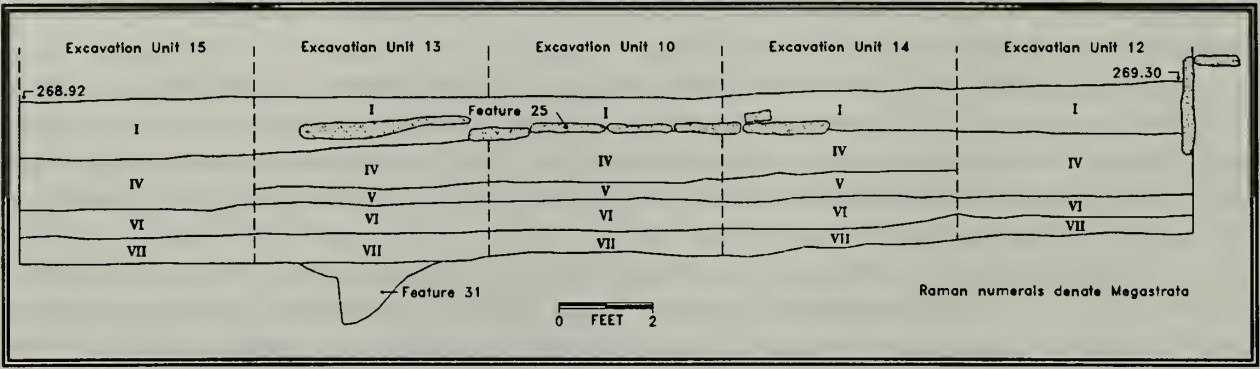

Figure 3.6 East-west profile of southern east yard of Park Building 48.

tableware forms included 6 in. to 10 in. diameter plates (n=19), one platter, one unidentified flatware vessel and eight bowls. Over 90% (93%, n=27) of these tableware vessels were pearlware and the rest were undecorated creamware. Decorative techniques of these vessels ranged from transfer printing (6 plates, 2 bowls) to shell edged (12 plates, the platter) and dipped pieces (5 bowls).

Ware types among the teawares consisted of creamware (1 cup), pearlware (n=29), porcelain (n=6), bone china (n=1), refined redware (n=1) and whiteware (n=1.) Porcelain forms included a tea/coffee pot, three cups, and two saucers. All of the porcelains were painted over glaze in various colors. The one creamware form identified was a painted teacup. The bone china vessel was also a teacup with a blue transfer printed design. The pearlware teacups (n=12) and saucers (n=17) were all transfer printed or painted in a variety of colors. The refined red paste earthenware vessel was a tea/coffee pot with a silver luster on the exterior and a plain white slip on the interior.

Storage/utilitarian wares consisted of only 11.2% (n=10) of the total ceramic vessel count. Eight of these vessels were coarse earthenware crocks/jars and the other two were pans with green slip decorations.

Another 12.4% (n=11) of the identified vessels were of undetermined hollowware (n=10) or unidentified vessel forms (n=1). Seven of these unidentified vessels were of refined paste, three were coarse earthenware and one was a slipware.

Of 364 glass fragments the majority were flat glass (88%, n=319) and glass container fragments consisted of 11% (n=39). Five pieces of unidentified glass and one piece of a lamp chimney complete the glass assemblage.

Minimum vessel analysis identified only four bottles in Megastratum VI, two aqua, one blue and one colorless. One of the aqua bottles possessed a folded lip, but no other manufacturing information could be determined for any of the bottles.

There were 590 metal artifacts cataloged from Megastratum VI. Nails accounted for 69.5% (n=410) of this total, and most of them were unidentified (n=319) but machine cut, wire and hand wrought types were all represented. Items cataloged as tools (1.02%, n=6) and hardware (2.03%, n=12) included spikes (n=6), files (n=4), chisels (n=2), a knife and a bucket handle. Other items included three forks and one table knife, a bayonet, a rifle barrel, a thimble, five buttons and straight pins. Fragments of containers (13.2%, n=78), unidentified metal fragments (6.27%, n=37) and unidentified objects (5.4%, n=32) complete the assemblage.

Several artifacts of specialized or personal import were recovered. As discussed above, several table utensils, arms items and sewing items were recovered. There were a total of seven buttons cataloged -- five metal and two shell. Artifacts of bone included three utensil handles, a lice comb and a carved pocket knife handle.

Floral and faunal materials included wood fragments, clam, oyster and egg shell, and bone. The bone recovered consisted of 85.6% mammal (n=392) with small representations of avian (14%, n=64), fish (0.2%, n=1) and unidentifiable bone fragments (0.2%, n=1).

1810s to 1820s (Megastratum VII -- East and West Yard Excavations)

Stratigraphy. Megastratum VII consisted of a transition between the historic occupation and sterile soil. Its soil mostly contained a dark yellowish brown (10YR 3/4) and a brown-dark brown (10YR 4/3) silty loam and sand. The average top elevation measured 266.81 ft amsl and was excavated for an average of 1.0 ft.

Features. Feature 27 consisted of a trash pit found in Excavation Unit 10 and was related to some of the earliest deposits at the site. It contained a dark yellowish brown (10YR 3/4) sandy silt. It measured 2.5 ft north-south and 4.0 ft east-west. It was found at a depth of 265.97 ft amsl and continued for 0.2 ft. The materials found date to the first quarter of the nineteenth century and include slip decorated redwares, creamware, embossed shell edged wares, bone, and a French gunflint.

Feature 26 contained articulated brick and shale that may have served as flooring for a kitchen, bakehouse, or smokehouse. The top of the feature measured 267.63 ft amsl and proceeded for about 0.3 ft. The brick appeared in the southern portion of the excavation unit and continued into the southern wall, although no definable edge existed. This lack of definition may have been a product of the destruction of the structure in the 1830s to allow room for the building of the east wing. A flooring at this depth was not found in any other excavation unit.

Feature 31 was a trash pit in the southeast corner of Excavation Unit 13. The soils consisted of a dark yellow brown (10YR 4/4) silty sand and mottled yellow brown (10YR 5/4). The top of the feature measured 265.43 ft amsl and continued for about 1.0 ft. Rodent burrows disturbed portions of the feature, although most of the artifacts dated to the first quarter of the nineteenth century.

Artifacts. A total of 1234 ceramic sherds were recovered from this megastratum. Over half of these sherds were pearlware (53.3%, n=658). Red paste earthenware (28.7%, n=354) and creamware (10.7%, n=132) composed most of the remainder of the assemblage. Various types of porcelain hard paste (n=40) and chinese export (n=6) were 3.7% of the total assemblage and various stonewares (n=11) were another 0.9%. The balance of the assemblage consisted of unidentified white paste and color paste earthenware (0.5%, n=6), whiteware (0.2%, n=3) and refined red paste earthenware (0.2%, n=2). Two of the pearlware sherds from this megastratum were impressed with partial makers marks of the Andrew Stevenson pottery in Cobridge, England, and dated from 1816 to 1830 (Godden 1964:596).

Minimum vessel analysis identified a total of 62 ceramic vessels within this megastratum (see Lucas this volume). Nearly three-quarters (69%, n=43) of these vessels were identified as table- (n=17) and tea- (n=26) wares. Ware types in the tablewares consisted of pearlware (n=12), creamware (n=2), porcelain (n=2) and bone china (n=1). The forms identified in the tablewares included one pearlware pitcher, one unidentified pearlware flatware with a blue shell edge decoration, and 15 plates of various sizes and ware types. Decorative techniques for these plates included shell edged, transfer printed and painted.

Ware types identified in the teawares consisted of creamware (n=2), pearlware (n=15) and porcelain (n=9). The identified forms included one creamer (of creamware), 11 teacups (7 pearlware, 4 porcelain) and 14 saucers (1 creamware, 8 pearlware, 5 porcelain). The decorative techniques appearing on these items included transfer printing in blue and brown, and painting both under and over the glaze in several colors.

Within the category of storage/utilitarian wares, 10 (16%) vessels were identified. Identified ware types included coarse red paste earthenware and gray bodied stoneware. Identified forms consisted of crock/jars (n=5), slipware pans (n=3), one flatware and one jug.

The remaining identified vessels (15%, n=9) consisted of unidentified hollowware and unknown forms of coarse earthenware (n=2), pearlware (n=4), slipware (n=2) and stoneware (n=1).

Over 70% of the glass cataloged was identified as flat glass (72%, n=126). Almost 25% of the assemblage was container glass (24.5%, n=43). Unidentified glass fragments (2.9%, n=5) and one piece of lamp chimney glass (0.6%) completed the cataloged assemblage.

Minimum vessel analysis of the recovered glass fragments identified six bottles -- two of colorless glass, two of olive glass, and two of brown glass. There was no determination of manufacturing technique or finish type for any of the bottles. Content could be determined for only two of the bottles. One was a colorless patent/extract type bottle and another was a brown snuff bottle.

Over 75% of the metal assemblage consisted of nails (76.5%, n=290), most of them (n=205) unidentified. The 11 artifacts cataloged as hardware included spikes, hooks and a chest latch. The rest of the collection consisted of straight pins (n=16) and other identified (n=7) and unidentified (n=55) metal items.

Personal and other items cataloged included buttons (5 metal, 1 shell, 1 bone), a bone fork handle and 11 pieces of ball clay tobacco pipes. One U.S. Large Cent was recovered. This coins date is unreadable however the discernable design dates the production of the coin to between 1796 and 1807 (Yeoman 1963:68-72). Two gun flints, one English and one French, were recovered. Also found was one piece of prehistoric pottery -- a very worn cord-marked sherd with quartz and sand temper.

The faunal materials recovered (n=388) were overwhelmingly mammal (87.6%, n=340) with most of the rest being avian (10.8%, n=42). Only five pieces of fish bone (1.3%) and one unidentified bone (0.3%) were among those cataloged.

OVERVIEW

Generally, undisturbed stratigraphic layers exist around Park Building 48. Artifacts indicate that the earliest occupation dates to the 1820s and is probably associated with an armory household's occupation. An analysis of the features demonstrates that the east wing was erected during the 1840s at about the same time the armory began collecting the rents from two families from this building. After the armory occupation, the occupants terraced the lands and several outbuildings were constructed on the property. A more detailed contextual analysis of the meanings and uses of the archeologically recovered materials are noted in the following chapters.

CHAPTER 4

CULTURAL LANDSCAPE AND HISTORIC STRUCTURES SURVEY

Paul A. Shackel

INTRODUCTION

The following section details the changing landscape, built environment, and architectural features around Park Building 48, Lot 2 of lower town Harpers Ferry, on the north side of Shenandoah Street. Archeological data are used in conjunction with maps, photographs, and deeds and provide a more complete scenario of the changing landscape in the project area. The archeologically recovered information supplements the existing physical histories (Bumgardner 1991; Snell 1958, 1980a, 1981a, 1981b). Archeology can detect unrecorded features, verify and supplement the existing historical documentation, and date the various features and the cultural deposits around the structure. For the purpose of this report, landscape is discussed in terms of changing topography and the built environment.

Unlike most northern industrial towns, Harpers Ferry developed in a comparatively haphazard style. In the first quarter of the nineteenth century, street design, factory and housing construction often lacked uniformity. The town developed in a situation that resisted factory discipline and rejected many components of modern industrial culture.

When Harpers Ferry began its operations in 1800 to 1801, the government faced a severe shortage of housing for its approximately 100 craftsmen. Within a decade the workforce doubled, expanding at a far greater rate than dwellings could be built. Opportunities for workers to build their own dwellings was limited as the Wager family held a monopoly on all of the privately owned 6 ¾ acres of town land and the government provided little support for the armorers and their families. An 1810 letter from Paymaster Annin to the Secretary of War noted that workers used the second floors and lofts of workshops as lodging, while other families used the log houses or huts built by the army in 1799 (Paymaster Annin to the Secretary of War, Secretary of War Letters Received 1810: A-29(5)). In 1811, six houses were built by the government on public lands and were occupied by armory mechanics. From 1812 to 1815 Congress placed financial restrictions on the construction of domestic structures. Paymaster Annin complained that workers continued to use workshop lofts as their lodging and that "some good mechanics have left us, meeting with better accommodations elsewhere, especially in Pittsburgh" (Harpers Ferry National Historical Park Reel 13, Vol 1:31-32, Nov 2, 1813).

In 1821 Superintendent Stubblefield requested additional funding from the Ordnance Department for housing. Prior to committing funds the federal government asked for an accounting of existing dwellings. Only 36 armory dwellings were officially known to exist although Stubblefield notified the government that 87 armory houses stood on public grounds. Apparently when Stubblefield was confronted with a growing workforce and a housing shortage he permitted workers to construct dwellings on government land. His actions facilitated the construction of 51 new residences for armory workers (Snell 1981).

During the 1820s, Stubblefield was faced with the task of settling armorer's claims for repairs, additions, and construction. He encouraged the Ordnance Department to pay for the claims in order for the armory to obtain the title of houses on armory land. In the mean time 25 more privately built armory domiciles were constructed on government land (Snell 1981).

By 1831, the Ordnance Department prohibited the private construction of any new dwellings on government land although the government did build twelve brick worker's houses that contained standardized floor plan, building materials, and design. These were the last worker's houses constructed by the government. Between 1845 and 1859, the government did erect five large brick quarters for the use of the Superintendent, Paymaster, two clerks, and the Master Armorer (Snell 1981:142).

GENERAL LANDSCAPE AND ARCHITECTURAL CHANGES

Background

Today Park Building 48 stands as a two-and-one-half story 19 ft x 33 ft stone structure on Shenandoah Street with its short side fronting the street. The original structure stands about 15.5 ft deep and a later addition measures 19 ft x 17.5 ft. Abutting the standing structure to the east are the remains of an addition that measures 20.3 ft east-west and 17.2 ft north-south. The eastern wall of the addition contains the foundation remains of a fireplace.

Some discrepancy remains about the structure's early occupants since the house was identified by different number designations through time. Stubblefield used one number system in the 1820s, while the armory incorporated a new numbering scheme in 1841. Historians (Bumgardner 1991; Snell 1958) have found it difficult to match the pre 1841 and the post 1841 residences and buildings. The many sets of house number designations make conclusions about its early occupants tentative. What is probably true is that William Smallwood, a breach filer, constructed the dwelling in the 1820s, although he probably lived elsewhere by the 1830s. In the 1840s a series of known armory workers and their families occupied the structure. The workers consisted of a carpenter, gunsmith, assistant jobbing smith, and a machinist. After the government sold the structure in 1869 it was probably primarily used as a tenement until the late twentieth century.

The Built Environment: 1803 to 1869

Historic records are unclear as to who originally inhabited the lot where Park Building 48 stands today. An 1803 map marks the proposed canal through Harpers Ferry as well as a "log house" and a "stable" on present Park Building 48 property (Figure 4.1). The canal follows present day Shenandoah Street and an armory stable stands south of the road.

How long the log house stood is unclear, but by the 1820s the armory removed the structure and an armory worker constructed a stone dwelling. By comparing structure dimensions, William Smallwood can be credited with the building's construction. Today the

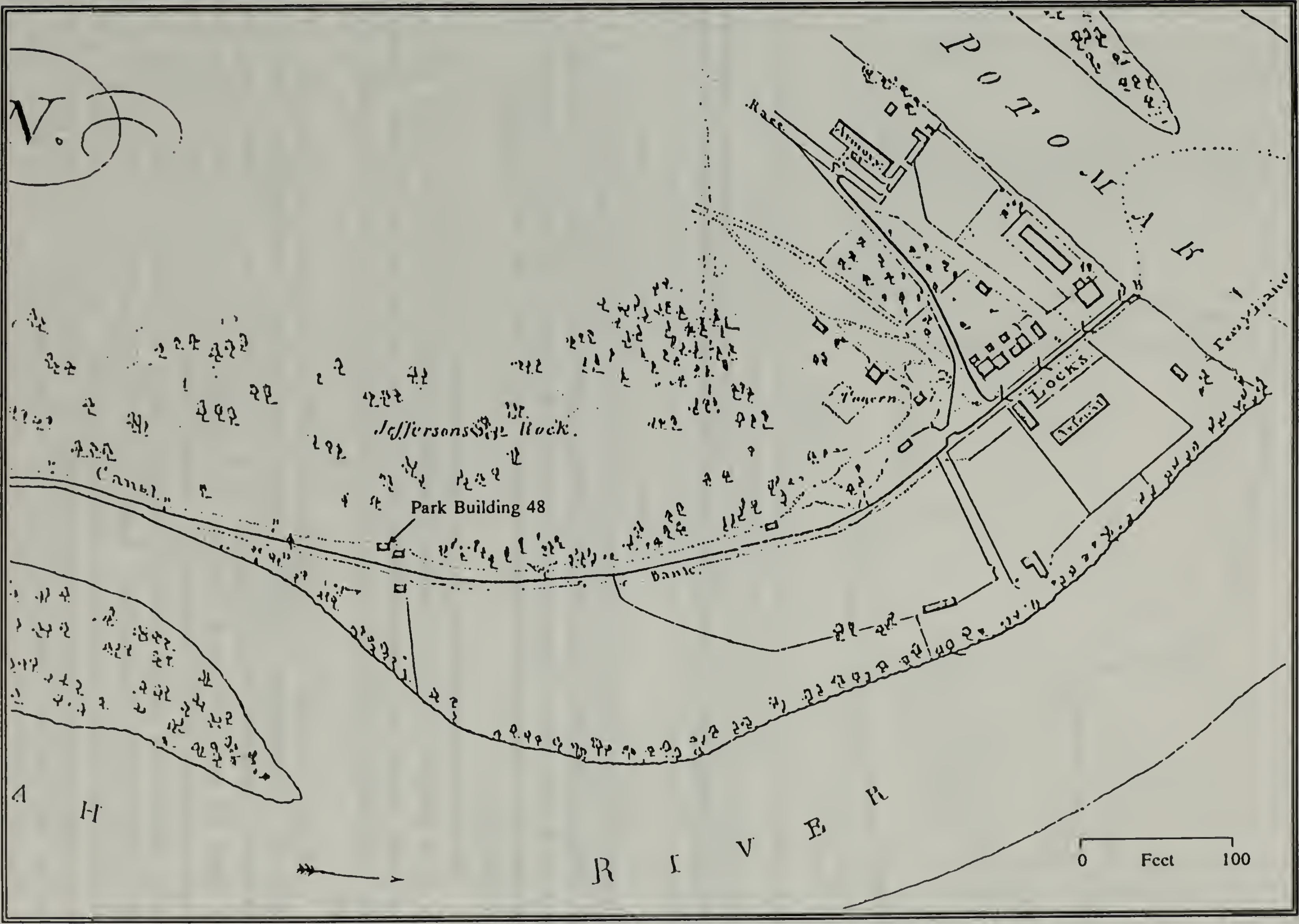

Figure 4.1. 1803 map of Harpers Ferry.

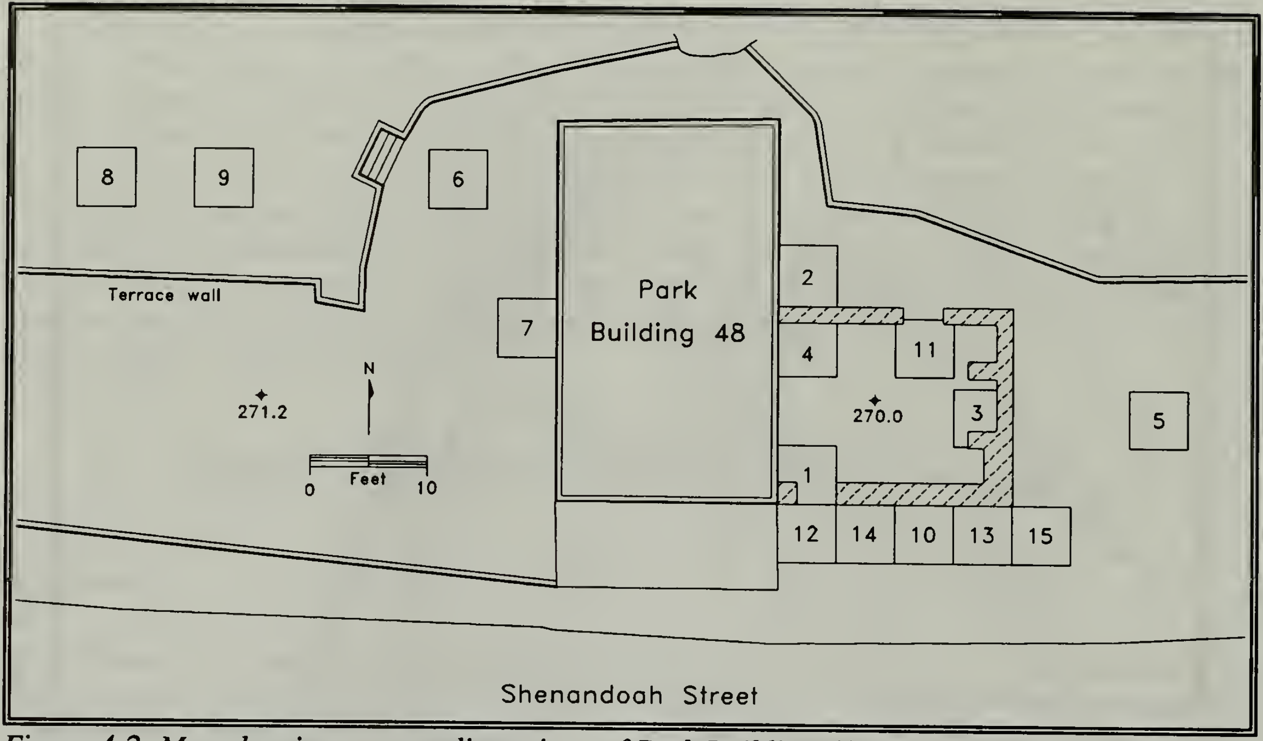

Figure 4.2 Map showing current dimensions of Park Building 48 and location of the excavation units.

oldest portion of the stone house measures 19 ft x 15.5 ft and closely matches the 19 ft x 16 ft stone dwelling dimensions used to describe Smallwood's house (Figure 4.2). Associated with the structure were various dependencies including a log house, bake oven, smokehouse, privy, stable, and fence (*American State Papers, Military Affairs* 1981:143-144; Bumgardner 1991:10; Snell 1980a:29).

Nineteenth-century armory maps do not document Park Building 48. Since Park Building 48 is on the periphery of town, north of Shenandoah Street and west of the central commercial district, map makers may have considered the structure unimportant and therefore unworthy of noting. Archeological evidence indicates that the existing structure stood continuously from the 1820s.

Between 1837 and 1852 at least two additions were attached to the original core of Park Building 48. Bumgardner (1991:11) reasons that in 1831 Superintendent Rust had not compensated Smallwood for building the 19 ft x 16 ft stone building. No other compensations were noted for any additions at this time. Few documented repairs occurred on government lands between 1831 to 1837 and after the sale of armory dwellings in 1852 no major armory dwelling construction related to armory works occurred on government lands (except for the building of the high official quarters). Rent rolls for Armory Building 32 indicates it as a single family dwelling in 1841, but by 1844 it became a duplex. At this time the armory probably constructed the northern addition to Park Building 48. Archeological evidence provided a clear picture of the different building episodes of Park Building 48. The original structure's foundation measured 3.9 ft below the present surface while the northern addition's foundation

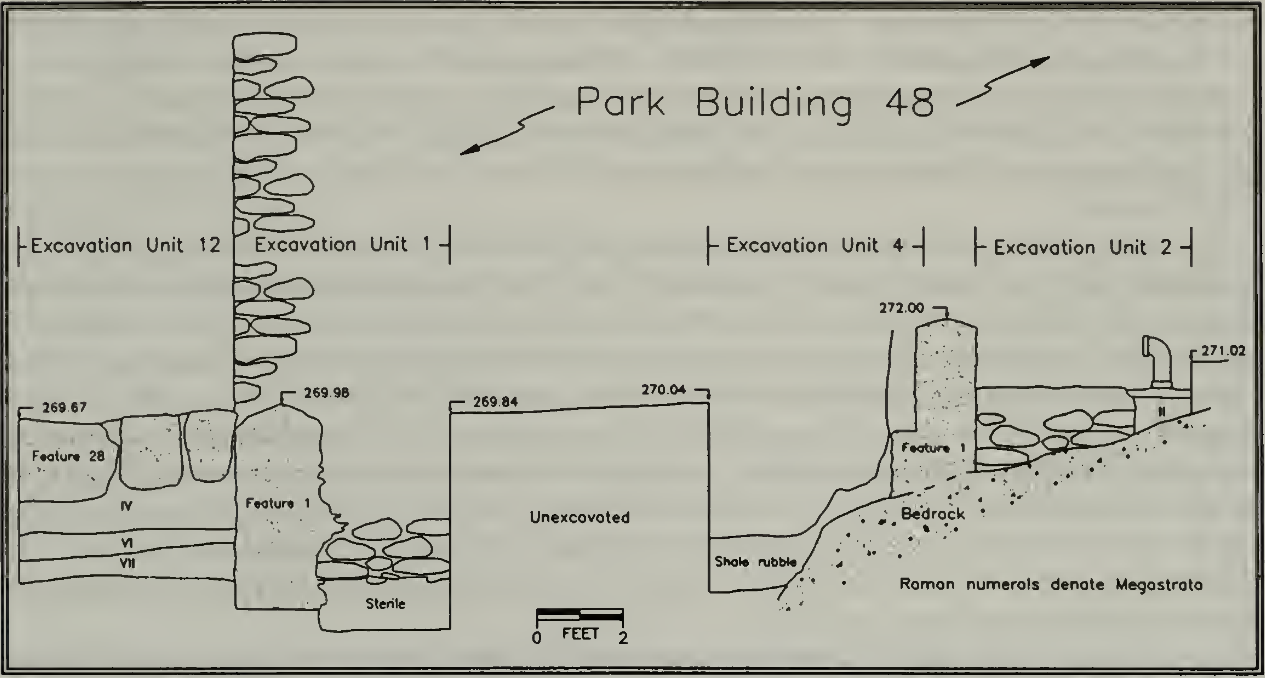

Figure 4.3 Profiles of eastern wall of Park Building 48.

measured two feet shallower than the original structure (Figure 4.3). The entire addition was constructed of fieldstone and a seam where the addition attached to the original structure was visible in the subsurface and lower parts of the foundation.

A dry laid shale wall (Feature 22) abutted the western wall of Park Building 48 and was found approximately 1.0 ft below the current grade in the southern edge of Excavation Unit 7 (Figure 4.4). The feature dated to about the 1830s. Although the wall's function is currently unknown, it may have served as a landscape feature or a foundation wall.

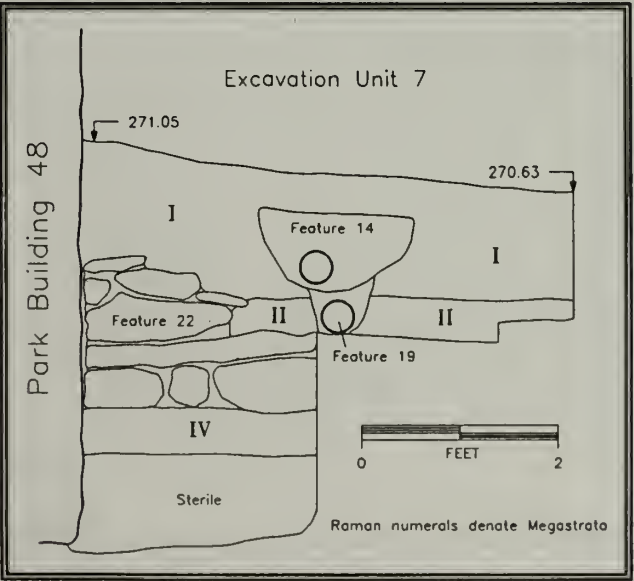

Figure 4.4 Excavation Unit 7, Feature 22. Dry laid shale wall in the southern edge of the unit.

The east wing foundation abutted Park Building 48 and measured 20.3 ft x 17.2 ft (Figure 4.2). A clear seam existed between the south wall of the east wing and Park Building 48. Stone shims were placed between the two adjoining walls, probably at the time of construction. Archeological evidence indicates that the material under the east wing floor dated from the 1810s through the late 1830s. Once the east wing addition was constructed deposits no longer accumulated within the east wing foundations, although later deposits were found on the exterior of the foundation. Therefore, the late 1830s-1840s is a good approximation for the construction of the east wing. The National Park Service repointed the top 1.0 ft - 1.5 ft of the entire east wing foundation in the 1960s. Archeological evidence shows no evidence of remaining sills near the present locations, nor anywhere else in the south wall foundation. Therefore the doorway sills may have been removed during the 1960s stabilization and the present doorway configuration is an imaginative rendition of past construction techniques by the 1960s mason.

The remains of brick and shale flooring (Feature 26) from an outbuilding were found within the east wing foundation in Excavation Unit 11 and predated the extension's construction. It was probably removed for the construction of the duplex extension in the 1840s. Because of destruction disturbances from the removal of the outbuilding, the northern boundary of the flooring was uncertain. The floor's northern edge extended to at least 1.2 ft from the southern edge of the unit and maybe as far as 3.0 ft, although excavations did not find any evidence of associated foundations for the building. Archeological materials, from the pre-east wing layers in the immediate area, consists of fireplace equipment, probably related to the early log house occupation or the bake oven or smokehouse from an early phase of Smallwood's estate. The feature dates from the 1810s to 1820s. The top of the layer measured 267.63 ft above mean sea level (amsl) and continued for 0.27 ft.

The east wing addition (Feature 1) consisted of a step-like foundation as the upper portion measured 1.7 ft wide and the lower section measured between 2.0 ft to 2.2 ft wide. In the northern and eastern edges of the foundation the step protruded toward the interior, while in the southern foundation the step protruded toward the exterior (Figure 4.5). In Excavation Unit 4,

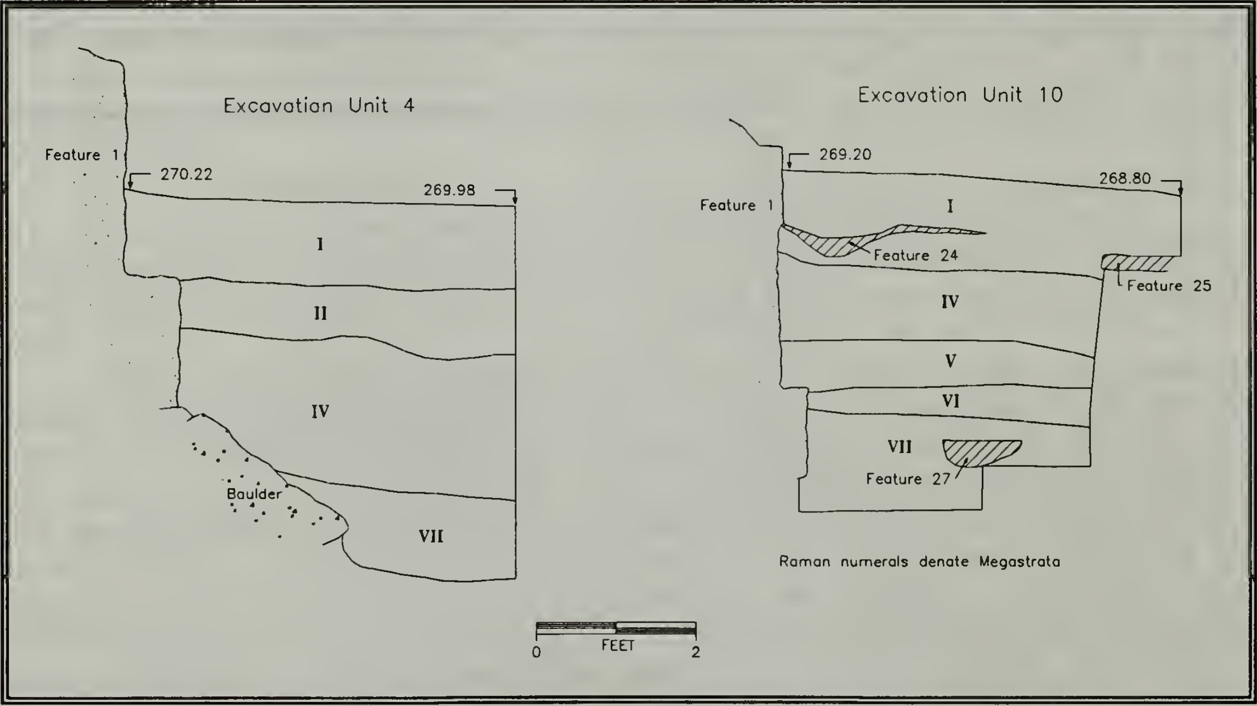

Figure 4.5 Profiles of the northern and southern foundations showing the step-like construction of the foundation walls.

which was adjacent to the interior of the northern foundation of the west wing where it joined Park Building 48, the ground surface measured 270.06 ft amsl and the top of the step was found at 269.46 ft amsl. The foundation continued until bedrock was reached at 267.70 ft amsl. In all of the excavation units that lined the southern wall (Excavation Units 10, 12, 13, 14, 15) the ground surface measured 269.01 ft amsl. The top of the step was found at 266.4 ft amsl and ended at 265.03 ft amsl.

The remains of a shale fireplace existed in the eastern wall of the east wing foundation. The interior dimensions measured 4.5 ft wide and 2.6 ft deep. The fireplace's sidewall articulated with the east wall of the east wing foundation and therefore was probably constructed contemporaneously with the addition. The interior step-like feature for the foundation wall continued through the interior of the fireplace. The top of the step began about one foot below the surface along the interior of the northern fireplace sidewall (268.9 ft amsl), while the top of the step sloped down toward the southern wall as it was found at 268.4 ft amsl along the southern fireplace sidewall.

Changing Topography: 1803 to 1869

Not only did a stone dwelling and various outbuildings replace the early nineteenth century log house in the 1820s, but the general topography changed dramatically by the 1840s. In the first decades of the nineteenth century the topography sloped south toward Shenandoah Street. Bedrock, which measured 268.39 ft amsl in Excavation Unit 2, was exposed during the 1810s occupation of the lot (Megastratum VII). This same occupational layer existed about 2.5 ft lower in the front of the yard in Excavation Units 10, 12, 13, 14, 15 (Figure 4.6). The construction of the east wing foundation had footings that averaged 2.0 ft deeper toward Shenandoah Street and may be a product of the original sloping topography.

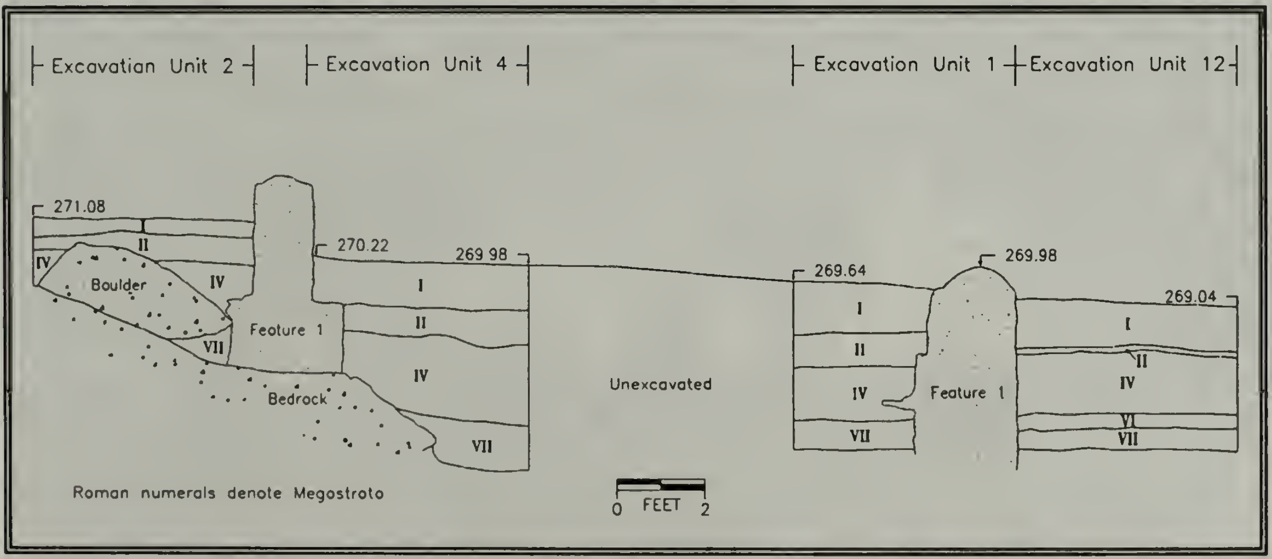

Figure 4.6 East wall profiles of Excavation Units 1, 2, 4, and 12.

From the 1820s to the late 1830s (Megastratum V and VI) an average of 0.5 ft of soil and material cultural accumulated in the lower yard, although any significant accumulations in the upper yard were undetected. After the construction of the east wing large quantities of soil, shale, and artifacts were deposited throughout the whole yard (Megastratum IV). An additional foot of soil accumulated toward the rear of the yard and the top average yard elevation measured 269.44 ft amsl. In the lower yard slightly more than two feet of deposits accumulated and the average top yard elevation measured 268.00 ft amsl. Therefore, less than a 1.5 ft difference existed between the front and rear yards east of Park Building 48.

The Built Environment: 1870 to 1990

No nineteenth-century maps, including the Sanborn Fire Insurance Maps, incorporate Lot 2 where Park Building 48 stands. An 1898 photograph looking east -- down Shenandoah Street -- west of Park Building 48 provides some information about the structure, its additions, and its dependencies (Figure 4.7). A one story addition exists off the northwest corner of the building. At least one window existed on the west side of the addition and a door and possibly another window fronted Shenandoah Street. A stove pipe protrudes from the addition.

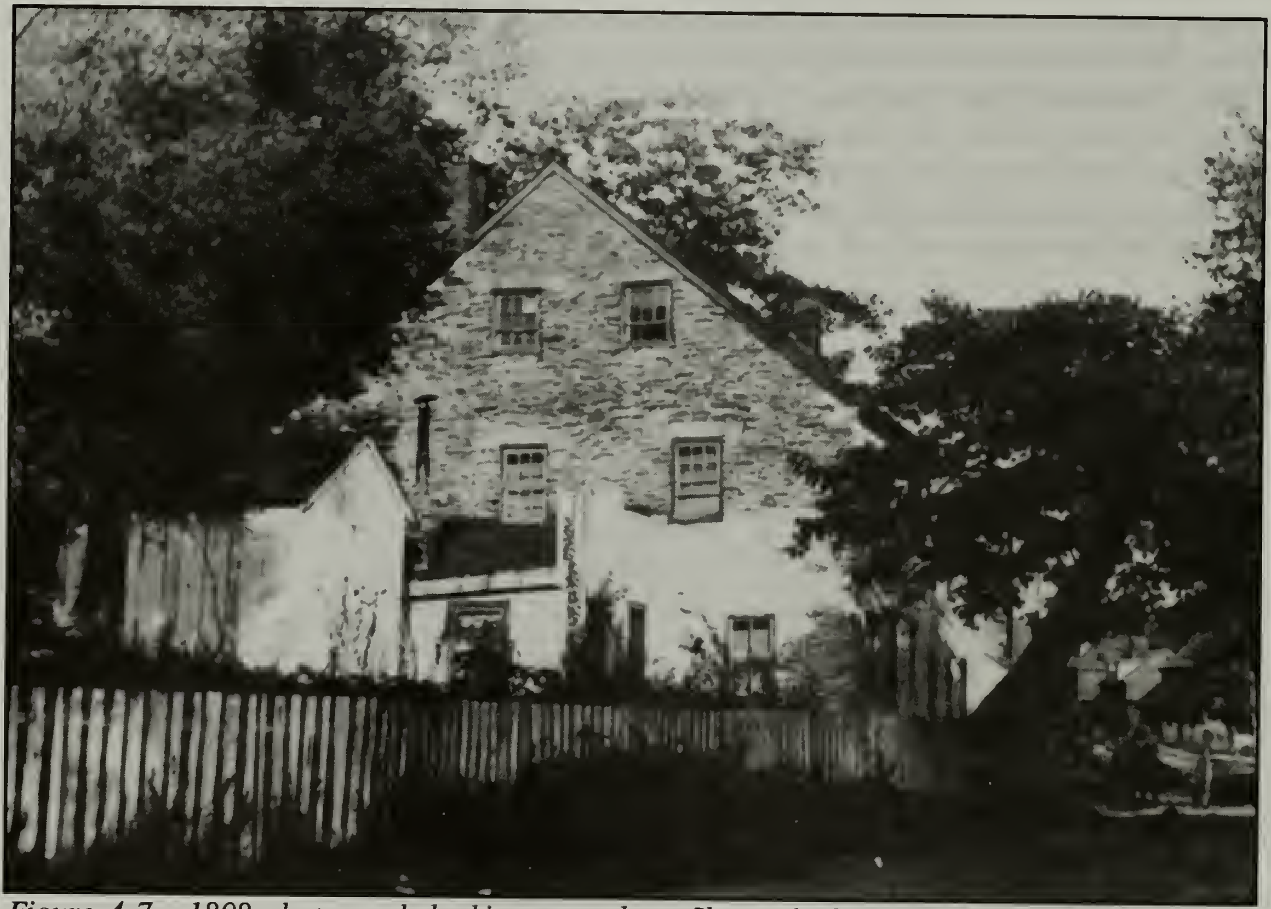

Figure 4.7. 1898 photograph looking east along Shenandoah Street toward the commercial district, showing the west facade of Park Building 48.

The probable footing for the addition was found in Excavation Unit 6 (Feature 13). It ran perpendicular to Park Building 48's west wall and consisted of one course of shale about one foot wide (Figure 4.8). Several feet to the west is a one-story shed that sits on the terrace (Figure 4.7). The footing for the shed consisted of one course of shale and ran in an east to west direction in the north portion of Excavation Unit 8. The foundation was placed directly on the ground rather than in a trench. Archeological evidence indicates that the western extension and the shed were late nineteenth-century additions.

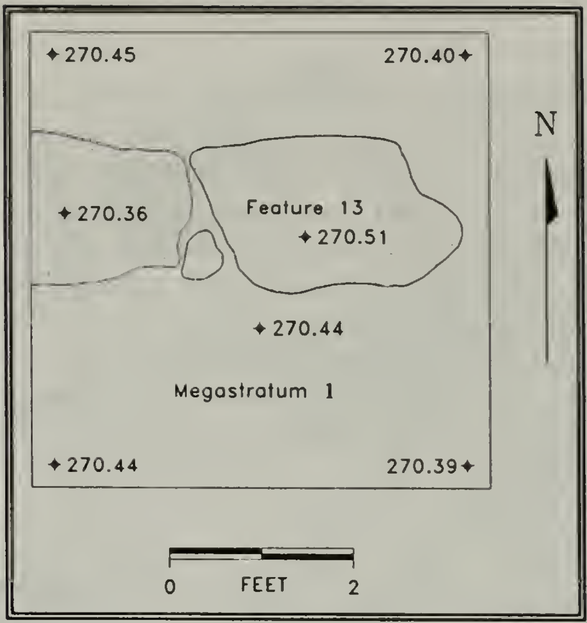

Figure 4.8 Excavation Unit 6, Feature 13. Probable footing for the late nineteenth-century northwest addition to Park Building 48.

The east wing foundation is somewhat visible in the 1898 photograph. Park Building 48 consisted of a two-and-one-half story stone construction and the first floor had a central door flanked by a window on either side. The east wing appears to have been constructed of stone and had generally the same roofline as Park Building 48. Three openings for windows and doors existed about one foot lower than those in Park Building 48. The wood fence that lined the property blocks the view of the lowest extent of these openings, therefore only a tentative guess can be ventured as to their exact functions. The fence appears only in front of the present Park Building 48, while the eastern portion lacked any barrier between the house and the street. This phenomenon may indicate that different families may have resided in the eastern and western portion of the structure.

A 1913 Baltimore and Ohio Railroad Map no longer shows the shed and the western additions (Figure 4.9). A stone wall now exists where the wood fence formerly lined Shenandoah Street and now encompasses the formerly unfenced area in front of the east wing extension. The railroad map exhibits the east wing and Park Building 48 as one structure that was owned by Eugene Sugart. A single stone wall lining the entire front of Park Building 48 and the east wing may be an indication that the two segments of the property were unified by a single occupant. The structure was converted from a duplex to a single family dwelling in the early twentieth century.

The 1933 Sanborn Fire Insurance Map shows the same basic building configuration as the earlier maps, although the east wing is no longer a two-and-one-half story stone addition, but rather a two story frame addition (Figure 4.10). If we can believe the accuracy of the maps, it appears that the stone east wing may have collapsed or was destroyed by the 1924 flood. A wood addition with the same floor dimensions as the former stone east wing is present in the 1933 Sanborn Map. The insurance map provides the impression that Park Building 48 served as the main dwelling and the east wing wood extension may have been incorporated as dwelling space or served another utilitarian function. A doorway connected the two buildings. Oral history indicates that the wood extension stood until the late 1950s.

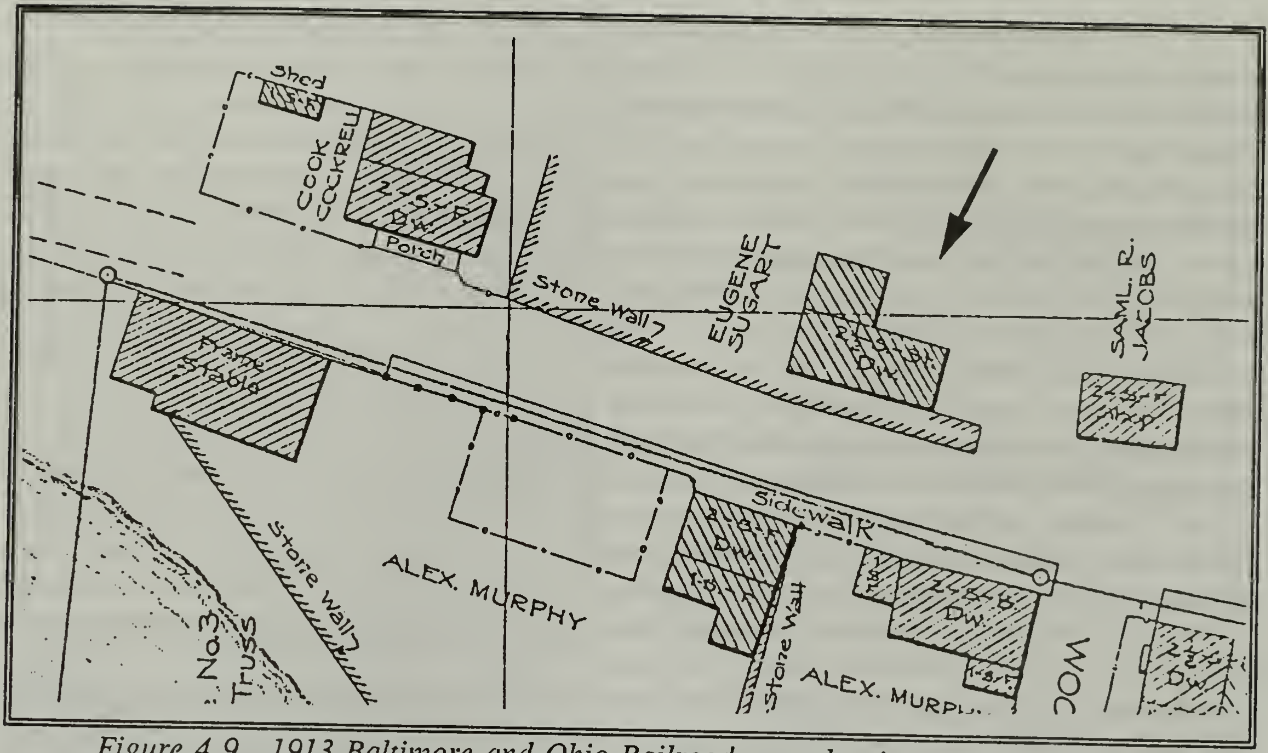

Figure 4.9. 1913 Baltimore and Ohio Railroad map showing Park Building 48.

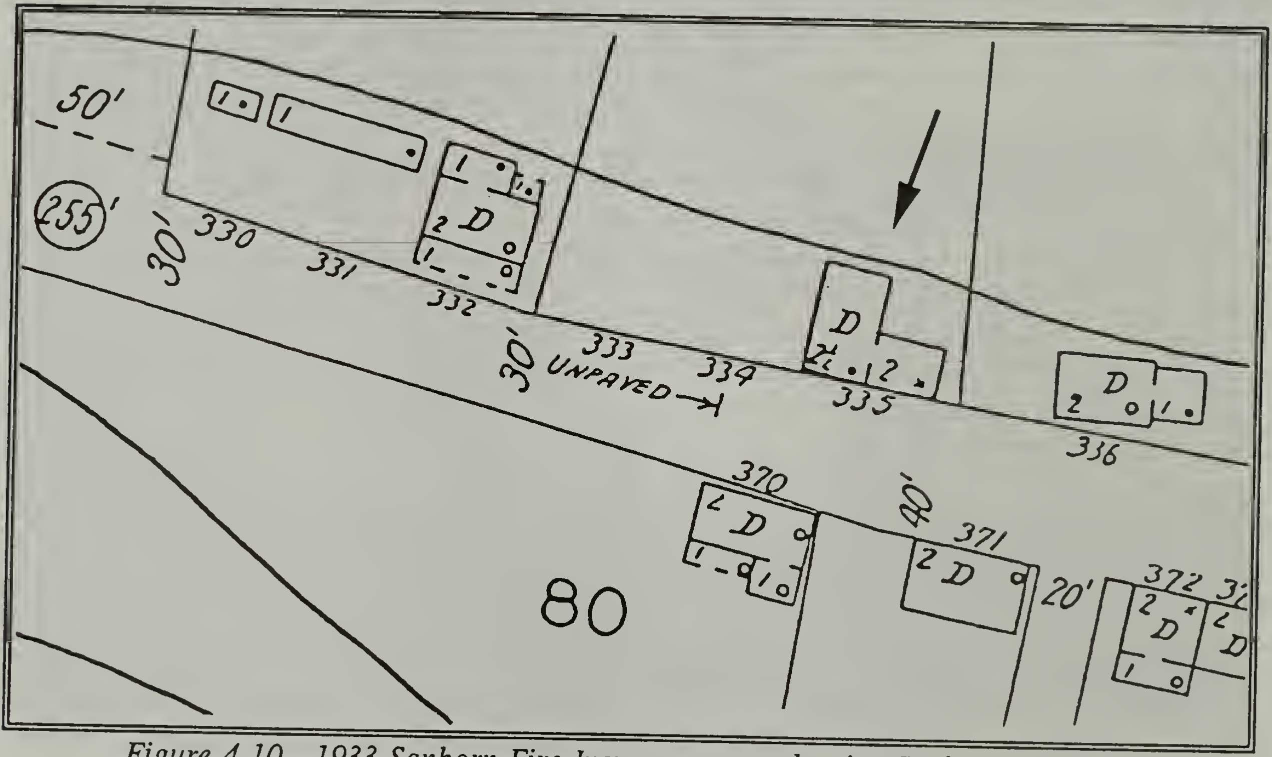

Figure 4.10. 1933 Sanborn Fire Insurance map showing Park Building 48.

Changing Topography: 1870 to 1990

Excavation Units 8 and 9 on the western terrace were the only places where mid to late nineteenth-century deposits (Megastratum III) were found. The rest of the yard may have been landscaped soon after the Civil War. Late nineteenth- and early twentieth-century deposits (Megastratum II) were found in both the east and west yards, except for the terraced area in the west yard. Generally the top elevations measured 270.35 ft amsl toward the rear of the yards and 268.35 ft amsl toward the front of the yards. The top layer (Megastratum I) was attributed to the tenement and National Park Service occupations in the twentieth century. The opening top elevation of the site measured about 271 ft amsl toward the rear of the yards, while the front portion of the yards measured 269.25 ft amsl. The northern edge of a brick lined shale walkway (Feature 25) was found in Excavation Units 10, 13, 14 , and 15. The top of the feature measured 268.28 ft amsl. The width of the feature was undetermined.

CONCLUSION

During the first half of the nineteenth century the topography and the built environment changed significantly. In the 1820s William Smallwood built a 16 ft x 19 ft two-story stone structure that replaced an earlier log dwelling. Other related outbuildings were also constructed at that time. During the first decades of the nineteenth century, the surrounding topography sloped on the average of 2.5 ft from the rear of the property to Shenandoah Street.

By the 1840s, the landscape changed dramatically to comply with the armory's housing demands as well as to conform to the imposed balance, discipline, and uniformity demanded by the new military administration in 1841. While the government rebuilt the armory using standard architectural design throughout the facilities in the 1840s and 1850s, at least two additions were placed on Park Building 48. One extended toward the rear of the property, while the other extended from Park Building 48 parallel to Shenandoah Street. An 1898 photograph indicates that the stone extension had a similar roofline as Park Building 48 and the window and door placements probably mirrored the facade of the original structure. No documents exist and little archeological data were retrieved regarding the placement of outbuildings on the landscape. A considerable amount of archeological deposits accumulated during the 1840s, most of which occurred in the front yard. The topographical difference between the back and the front yard decreased from 2.5 ft to 1.5 ft, although the surface still sloped toward Shenandoah Street. This general leveling of the yard appears to coincide with the armory's movement to create a balanced and uniformed topography throughout the town (see Shackel 1993).

After the Civil War, the building was auctioned and it probably served as a tenement through the mid-twentieth century. An 1898 photograph shows an addition on the northwest portion of the house, a shed in the yard, and a wood fence that lined Park Building 48 and the west yard. The fence did not border the east wing. By 1913 the fence was replaced by a stone wall that lined both sections of the duplex. Perhaps, the stone wall may signify the conversion of the structure from a duplex to a single family dwelling sometime between 1898 and 1913. Between 1913 and 1933, the stone east wing disappeared and a two story wood structure was constructed on the same foundations. The twentieth-century topography and built environment changed little until the lands were occupied by the National Park Service. In the 1950s and 1960s, the sheds were removed and the lands were graded.

CHAPTER 5

AN ARMORY WORKER'S TABLE: GLIMPSES OF INDUSTRIAL LIFE

Michael T. Lucas

INTRODUCTION

This chapter describes the changing uses of material culture, primarily ceramics and cutlery, recovered from an armory worker's site dating to the first half of the nineteenth century. An overview of conditions in the community of Harpers Ferry and the national armory will be discussed. Ceramic and cutlery data are presented from all episodes of site occupation, although the discussion will focus on armory workers' households during the first half of the nineteenth century. The analysis and discussion present several possible interpretations about early lifeways in an armory town in the context of resistance to innovation and change.

Material culture plays an important role in the construction of meaning within everyday social relations. The study of the cultural milieu in association with the archeological record has received an increasing amount of attention in many recent studies within the field of archeology (Beaudry et al. 1991:153; Hodder 1991; Klein 1991; Little 1992; Shackel and Little 1992). In this way, specific behavior associated with the consumption of food, which involves the use of material items such as ceramics and cutlery, can transmit information between members of society. Mary Douglas (1975:87) effectively explains the nature of this communication. She notes: "If we ask of any form of communication the simple question, what is being communicated?, the answer is: information from the social system." The meanings dispensed through material culture form the basis for an examination of armory worker families and their reactions to conditions within the community and the armory.

Behavior at the dining table, or at afternoon tea, involves communication through body motions and restraints, as well as in the manner the table is set. The proper service of tea during the nineteenth century, for example, often called for the adherence to appropriate codes of behavior for the consumption of tea, including the arrangement of teawares (Williams 1987:10-11).

The dinner table also provided a forum for specific ritualistic behaviors. Over one hundred books on etiquette were published in the United States between 1830 and 1860 (Lacour-Gayet 1969:80). These etiquette books outlined the proper behavior for a variety of social encounters, including dinner. The adherence to the manners proposed by these etiquette books reflected greater societal issues. In effect, proponents of proper ritual behavior were able to mask and reroute social inequalities at the table. As John Kasson (1987:121) notes: "Seeking to avoid overt conflict, apostles of civility redefined potential issues of class and social grievance to social propriety and 'good taste' and turned them back upon the individual."

When administrators at Harpers Ferry National Armory implemented industrial discipline some of the armorers resisted. This resistance may be read in the material culture of the armorers. Ceramics and cutlery, in conjunction with historical data, are examined to explore the acceptance of, or resistance to, new ideas or trends (i.e. dining behavior, the temperance movement, factory discipline) associated with industrialization in Harpers Ferry.

BACKGROUND HISTORY

Early nineteenth-century Harpers Ferry reflected a sinuous relationship between traditional craft production and mass consumption. Before the onset of industrial life, Harpers Ferry existed as a locally-based, tradition-oriented community. Transforming from craft production to a more mechanized environment did not rest well with many residents of Harpers Ferry. The social attitudes in Harpers Ferry did little to foster the establishment of social control necessary for the implementation of industrial life. Attempts to establish such institutions as church and school, as well as organizations such as the temperance movement, faltered in this climate of local isolation (Smith 1977:331). Work at the national armory reflected the prevailing conservatism toward new ideas that permeated private life.

During much of the first half of the nineteenth century the Harpers Ferry armory operated under a craft production system. The task-oriented mode of production was well suited for the tradition bound domestic lifestyle of residents of Harpers Ferry. When attempts were made to transform the armory into a more standardized and industrially efficient facility in the 1830s and 1840s, workers found themselves at odds with this new system of production. Controlling behavior and imposing increased discipline on the workers came in direct conflict with the personal freedom the armorers had grown so accustomed to throughout the entire history of the armory.

In the early 1840s, a new superintendent reinstated the prohibition of alcohol on the armory premises and introduced a clock and the concept of time discipline to armory workers. The workers' disdain for this new feature climaxed with a "clock strike" in 1842. The installation of a clock directly assaulted armory workers' traditional customs and freedoms (Smith 1977:271-272). Reactions such as the "clock strike" and the resistance to the prohibition of alcohol suggest that many workers were content with the customs of craft production and not eager to follow the guidelines of industrial discipline.

SITE HISTORY

Park Building 48, located on Shenandoah Street on the west end of Harpers Ferry, was built sometime between 1821 and 1832, most likely by armorer William Smallwood. Although William Smallwood built the structure, there is no historical data placing the Smallwood family or any other specific family in Park Building 48 before 1841, thus making correlations between specific individuals and the archeological record impossible at this time. It is probable the structure was inhabited by armory workers from the early nineteenth century.

William Smallwood was considered a wealthy member of Harpers Ferry society by the 1830s and owned a large tract of land in Bolivar Heights (Bumgardner 1991:15). Smallwood was also involved in the local political scene during the second quarter of the nineteenth century (*Virginia Free Press* (*VFP*) 5 July 1832:3; 7 March 1839:2; 4 April 1839:1; 13 May 1852:3). This involvement in politics helped form his high standing in the community.

Early rent rolls dating to March 1841 place armorer Augustus Shope and his wife Catherine in Park Building 48, where they apparently lived until Augustus's death in 1844 (Bumgardner 1991:24). After the Shope's departure it is likely that Michael Melhorn moved into the building for a brief period during 1844 (Bumgardner 1991:25). During the same year the armory added an east wing to the building converting it into a duplex for the John Berlin and James Y. O'Laughlin families (Bumgardner 1991:26). Historical records indicate that Berlin worked as a "jobber" during the 1840s and later as an "assistant jobbing smith." The Berlins occupied the duplex until 1849 (Bumgardner 1991:26,27).

Historical evidence about the lives of the O'Laughlin family is scant, however, data does suggest they were living in Park Building 48 from 1844 to 1846 (Bumgardner 1991:28). William H. Wentzle and his family replaced the O'Laughlins as residents of the building until 1849 (Bumgardner 1991:29).

John Roderick and Armistead Ball and their families replaced the O'Laughlins and Berlins as residents of the duplex in 1849. Like many of the residents, very little information exists on armorer John W. Roderick and his family. They probably occupied the structure until at least 1852 (Bumgardner 1991:30).

In contrast to the Roderick family, there is considerable historical data on Armistead Ball. Ball was noted as a fine mechanic, promoted to master machinist in 1849, and advanced to the post master armorer at the Harpers Ferry factory by 1859 (Smith 1977:247,248). He was also involved in the temperance movement (*VFP* 31 August 1843:3) and local politics (*VFP* 19 February 1852:2; *VFP* 27 May 1852:2).

Much of the history of site occupation remains unclear after the Ball and Roderick family moved in 1852 until 1881. Joseph Manuel resided in the building in 1862 and he used it as a residence and store (Chickering 1994:2). In 1880 local merchant Gabriel L. Myers purchased Park Building 48. The Shugart family purchased the property in 1907, although it is most probable that they never lived there but rented it out to tenants. A number of unknown tenants lived in the structure from 1886 until the National Park Service assumed control of the property in 1953 (Bumgardner 1991:34-42).

PHYSICAL DESCRIPTION AND ARCHEOLOGICAL EVIDENCE

Physical Description

The excavations consisted of 15 five ft by 5 ft units placed around Park Building 48 (see Figure 5.1). These units contained deposits from the early nineteenth century to the present. Similar soil layers were combined to form megastrata, and these megastrata were combined to form specific contexts associated with architectural changes and site occupation. Good ceramic preservation and the low degree of fragmentation allowed for a productive minimum vessel count. Following is a general description of the megastrata.

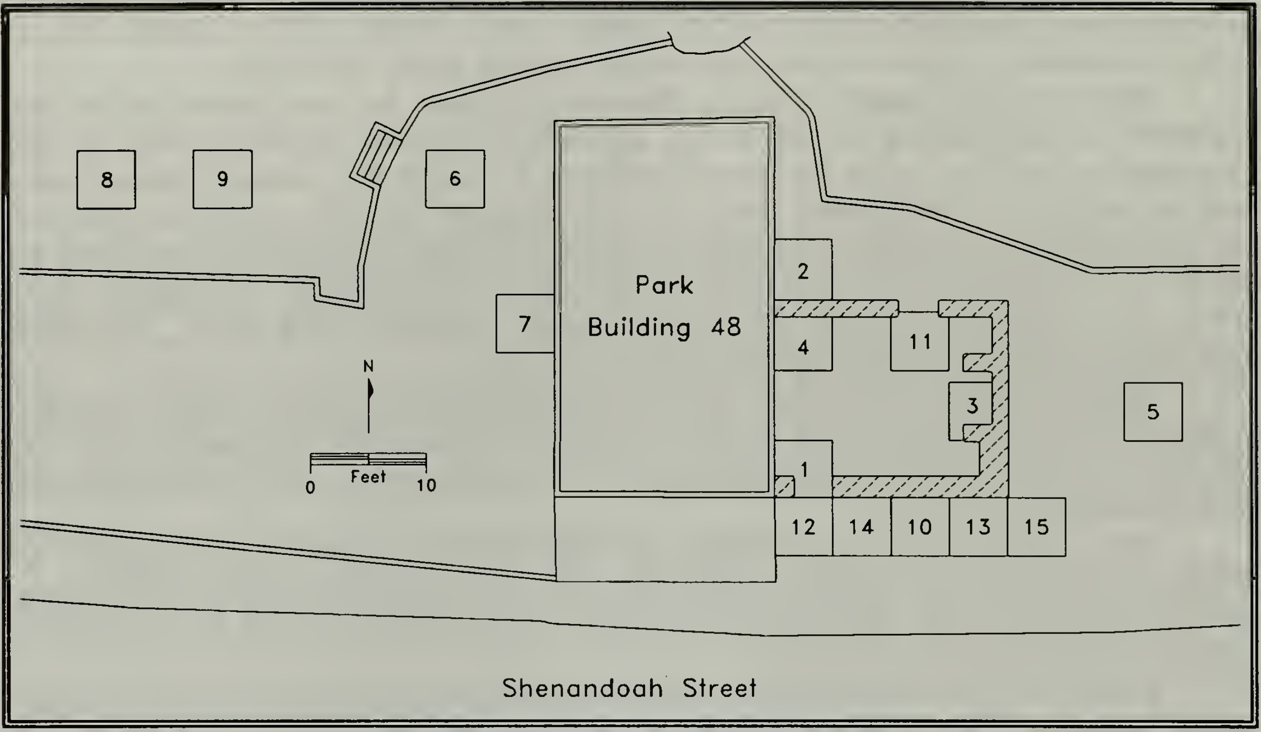

Figure 5.1. Map showing Park Building 48 with excavation units.

Context A (Megastratum I). Context A represents deposits from late twentieth-century occupation of the site. These deposits were found throughout the site area in all units. This context contained a large volume of artifacts including glass and metal objects as well as the ceramic vessels recovered. A total of 86 ceramic vessels were attributed to this context.

Context B (Megastratum II). Context B represents deposits from the late nineteenth-century occupation of the site. Most of the units contained artifacts from this context. Excavation Units 8-11 were the only units that did not produce any data from Context B. A total of 23 vessels were attributed to Context B.

Context C (Megastratum III). Only two units, 8 and 9, contain vessels from Context C. Context C represents the smallest sample of ceramics, 9 vessels, identified in the minimum vessel count. This context represents mid to late nineteenth-century deposits accumulated at the site.

Context D (Megastratum IV-V). All units with the exception of 8 and 9 contained ceramics from this context. The majority of ceramics were recovered from the units located on the eastern side of building 48 and directly north of Shenandoah Street (units 10, 12, 13, 14, and 15). This represents the period of site occupation from 1841/44 to 1852. The beginning date for Context D is associated with the east wing addition built sometime between 1841 and 1844.

Rent rolls list the structure as inhabited by a single family in 1841 and two families by 1844 (Snell 1981:49). This supports the proposed construction date. A total of 134 ceramic vessels were recovered from Context D.

Context E (Megastratum VI-VII). Again most of the ceramics from the context were located in units 10, 12, 13, 14, and 15. Context E represents deposits associated with an 1821 through 1832 to 1841/44 site occupation and contained 151 vessels.

Ceramic Data

The following section includes a descriptive analysis of the ceramics recovered from the Park Building 48 excavations. A minimum vessel count determined changing trends in the form and stylistic traits of ceramic items recovered archeologically. The resulting vessel data is organized and compared according to characteristics such as ware, decoration, and functional type. For comparative purposes, the following section is divided into two subsections. The first portion contains a summary of the ceramic data from Contexts A, B, C, representing deposits from the mid-nineteenth through the twentieth centuries. The second part is a presentation of the ceramics from Contexts D and E, representing deposits from the first half of the nineteenth century. Following this data section is a discussion and comparison of the data in historical context from the two earliest contexts.

Contexts A, B, and C

The volume of ceramic data varies considerably between the three later contexts. The vessels in Context A greatly outnumber the other two contexts. Context A (late twentieth century) contained 86 vessels while Contexts B (late nineteenth/early twentieth century) and C (mid to late nineteenth century) contained 23 and 9 vessels respectively. This discrepancy in the data is most likely due to the number of units containing ceramic data for each context. Only two units contained deposits from Context C, four contained deposits from Context B, while all 15 units contained Context A deposits. Because of these differences in sampling, comparisons remain tentative.

All three contexts display a high percentage of whiteware, although the percentages noted for Contexts B and C are less informative because of their small sample size (Table 5.1). This is not surprising due to the predominance of whiteware by the mid nineteenth century. Another noteworthy occurrence is the relatively high percentage of porcelain in both Contexts A and B. Context A contained 12.8% (n=11) and Context B contained 21.7% (n=5) porcelain.

Decoration. The ceramic data were also organized by decorative type. Only the primary decoration is listed in Table 5.2. Each of the contexts contained a high percentage of transfer printed as well as undecorated vessels. A large variety of decorative types are present in Context A and Context B. The same variety would most likely appear in Context C if the sample size were larger. Decorative classifications can be revealing as to the nature of the assemblage. Functional analysis, however, can provide a broader picture of the assemblage.

Table 5.1. Ceramic vessels by ware for Contexts A, B, and C.

WARE TYPE	CONTEXT A #	%	CONTEXT B #	%	CONTEXT C #	%
Pearlware	3	3.5	0	0.0	0	0.0
Creamware	1	1.2	0	0.0	0	0.0
Whiteware	49	57.0	13	56.5	5	55.5
Porcelain	11	12.8	5	21.7	0	0.0
Ironstone	4	5.8	0	0.0	2	22.2
Majolica	1	1.2	0	0.0	0	0.0
Rockingham	0	0.0	0	0.0	1	11.1
Coarse Redware	9	10.5	1	4.3	1	11.1
Yellowware	4	4.7	1	4.3	0	0.0
Stoneware	4	4.7	3	13.0	0	0.0
TOTAL	**86**	**100**	**23**	**100**	**9**	**100**

Table 5.2. Refined ceramic vessels by decorative type for Contexts A, B, and C.

DECORATION	CONTEXT A #	%	CONTEXT B #	%	CONTEXT C #	%
Shell Edge	4	6.0	1	5.6	1	12.5
Transfer Print	17	25.4	5	27.8	2	25.0
Painted	4	6.0	2	11.1	1	12.5
Enamelled	1	1.5	1	5.6	0	0.0
Dipped	0	0.0	0	0.0	0	0.0
Sponge	1	1.5	0	0.0	0	0.0
Molded	9	13.4	2	11.1	2	25.0
Gilded	4	6.0	2	11.1	0	0.0
Decal	9	13.4	0	0.0	0	0.0
Sprig Painted	0	0.0	2	11.1	0	0.0
Dipped	1	1.5	0	0.0	0	0.0
Undecorated	17	25.4	3	16.7	2	25.0
Other/unident.	0	0.0	0	0.0	0	0.0
TOTAL	**67**	**100**	**18**	**100**	**8**	**100**

Vessel Form

Tableware. Tableware is well represented in all three contexts (Table 5.3). The most abundant tableware form was the plate. Plates numbered 27 (31.4%) in Context A, 3 (13%) in Context B, and 4 (44.4%) in Context C. Context A contained a diversity in plate size including 8-, 9-, and 10- inch plate diameters. Nine-inch supper plates are most prevalent, comprising 5.8% (n=5) of the entire assemblage. Unfortunately the largest group of plates are unidentified in terms of size, 22.1% (n=19).

When the plates are analyzed by decorative type, variety exists here also. Transfer printed plates are the most common type present for all contexts, Context A 22.2% (n=6), Context B 33.3% (n=1), Context C 50.0% (n=2) (Table 5.4). Simple molded decoration on whiteware was a major type recovered from Context A, 22.2% (n=6). The only other type present, in substantial quantities, are bowls which form 5.8% (n=5) of Context A. Appendix 5.A contains a breakdown of bowls by decorative type. Teaware was the next category examined.

Teaware. Teaware is present in substantial quantity in Context A and Context B (see Table 5.3). Context B contained significantly higher percentages of teaware (21.7%, cups n=5; 17.4%, saucers n=4) than Context A (7.4%, cups n=4; 11.6%, saucers n=10). The discrepancy between the two may be due to the difference in overall sample size.

The largest difference between Context A and Context B is the variety of decorative teaware types existing in Context B (Table 5.5). Five decorative types are represented in Context B: painted, transfer print, undecorated, molded, and sprig painted. Context A contained only three different decorative types, transfer print, undecorated, and decal. Another interesting occurrence is the high percentage of porcelain, 40% (n=4), present in Context B. Porcelain teaware was not recovered from either Context A or C.

Storage and Kitchen. Context A was the only context containing a significant sample (12.8%, n=11) of storage and kitchen ware (see Table 5.3). Flower pots were found only in Context A. Bowls, 4.7% (n=4), were the next largest category of storage and kitchen ware present in Context A. All of these bowls were yellowware, one containing a white slip (see Appendix 5.A). Another interesting storage/kitchen ware vessel from Context C was a coarse redware cake mold.

Other or Unidentified. The other/unidentified group includes the entire spectrum of ware types, from coarse to refined wares, that do not fit any of the primary functional categories already discussed. Hollowware was the most significant group for contexts A, B, and C. Hollowware, defined as unidentified vessel forms with the capacity to hold liquid, constituted 15.1% (n=13) of Context A, 17.4% (n=4) of Context B, and 13% (n=3) of Context C. Toy saucers were present in Contexts A and B. These saucers were made of undecorated porcelain. Table 5.3 contains a full summary of other and unidentified forms.

Table 5.3. Ceramics by form for Contexts A, B, and C.

FUNCTION CATEGORY	FORM	CONTEXT A #	CONTEXT A %F	CONTEXT A %T	CONTEXT B #	CONTEXT B %F	CONTEXT B %T	CONTEXT C #	CONTEXT C %F	CONTEXT C %T
TABLEWARE	PLATE 10"	1	2.9	1.2	0	0.0	0.0	0	0.0	0.0
	PLATE 6"	5	14.3	5.8	0	0.0	0.0	0	0.0	0.0
	PLATE 8"	2	5.7	2.3	0	0.0	0.0	0	0.0	0.0
	PLATE 8"	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	PLATE 6"	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	PLATE 3-5"	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	PLATE UNID DIAMETER	19	54.3	22.1	3	60.0	13.0	3	100	44.4
	PLATE TOTAL	27	77.1	31.4	3	100	13.0	4	100	44.4
	PLATTER	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	FLATWARE	1	2.9	1.2	1	20.0	4.3	0	0.0	0
	TUREEN	1	2.9	1.2	0	0.0	0.0	0	0.0	0.0
	BAKER	1	2.9	1.2	0	0.0	0.0	0	0.0	0.0
	BOWL 6"	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	BOWL 5"	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	BOWL UNID DIAMETER	5	14.3	5.8	3	20.0	4.3	0	0.0	0.0
	BOWL TOTAL	5	14.3	5.8	1	20.0	4.3	0	0.0	0.0
SUB TOTAL		35	100	40.7	9	100	21.7	4	100	44.4
Teaware	TEA CUP	4	28.6	4.7	5	55.6	21.7	0	0.0	0.0
	SAUCER	10	71.4	11.6	4	44.4	17.4	1	100	11.1
	TEAPOT	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	PITCHER	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	CREAMER	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
SUB TOTAL		14	100	16.3	9	100	39.1	1	100	11.1
STORAGE/ KITCHEN	CROCK	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	BOWL	4	36.4	4.7	1	100	4.3	0	0.0	0.0
	JUG	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	BOTTLE	1	9.1	1.2	0	0.0	0.0	0	0.0	0.0
	BAKING DISH	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	CAKE MOLD	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
	FLOWER POT	6	54.5	7.0	0	0.0	0.0	0	0.0	0.0
SUB TOTAL		14	100	12.8	1	100	4.3	1	100	11.1
OTHER/ UNIDENTIFIED	HOLLOWWARE	16	61.5	18.6	3	87.5	30.4	3	100	13.0
	TOY SAUCER	2	7.7	2.3	1	12.5	4.7	0	0.0	0.0
	UNKNOWN	8	30.8	4.3	0	0.0	0.0	0	0.0	0.0
SUB TOTAL		26	100	30.2	8	100	34.8	3	100	13.0
TOTAL		86		100	23		100	9		100

%F = Percentage of Functional category %T = Percentage of total assemblage

Table 5.4. Plates by decoration for Contexts A, B, and C.

PRIMARY TYPE	CONT. A #	CONT. A %	CONT. B #	CONT. B %	CONT. C #	CONT. C %
SHELL	4	14.8	1	33.3	1	25.0
TRANSFER	6	22.2	1	33.3	2	50.0
UNDEC.	5	18.5	0	0.0	1	25.0
MOLDED	6	22.2	1	33.3	0	0.0
GILDED	3	11.1	0	0.0	0	0.0
DECAL	2	7.4	0	0.0	0	0.0
SPONGE	1	3.7	0	0.0	0	0.0
OTHER	0	0.0	0	0.0	0	0.0
TOTAL	27	100	3	100	1	100

Table 5.5. Teaware by decorative type for Contexts A, B, and C.

PRIMARY TYPE	CONT. A #	CONT. A %	CONT. B #	CONT. B %	CONT. C #	CONT. C %
PAINTED	0	0.0	1	10.0	1	100
TRANSFER	4	28.6	1	10.0	0	0.0
UNDEC.	4	28.6	1	10.0	0	0.0
*PORC.	0	0.0	4	10.0	0	0.0
MOLDED	0	0.0	4	10.0	0	0.0
GILDED	0	0.0	0	0.0	0	0.0
DECAL	6	42.9	0	0.0	0	0.0
SPRIG PAINTED	0	0.0	2	20.0	0	0.0
OTHER	0	0.0	0	0.0	0	0.0
TOTAL	14	100	10	100	1	100

* Porcelain is used in association with white earthenware decorative types because porcelain outweighs earthenwares in monetary or aesthetic value no matter what the decorative type on the earthenware.

Summary of Data From Contexts A, B, and C

A detailed description of the vessels from Contexts A, B, and C can be reviewed in Appendix 5.A. An overview of the above data reveals some intriguing information about the nature of the assemblages. One point is the relatively high percentage of tablewares present in Context A consisting of a diversity of vessel forms. Contexts A and B also had an overwhelming variety of vessel forms and decorative types present. Because of a small sample size in Contexts B and C, the percentages may be misleading. Any interpretations of this data should take this problem into account.

Contexts D and E

Contexts D and E represent the material culture refuse from the Park Building 48 occupation from the first half of the nineteenth century. The samples from the two contexts are similar in size. Context D (1841/44 to 1852) contained 134 vessels and Context E (1821/1832 to 1841/44) contained 151 vessels.

Ware. Table 5.6 contains a summary of vessels from Contexts D and E organized by ware. Clear distinctions between the different white earthenwares are evident for the early assemblages of the collection. Pearlware dominates all other types in total percentage for both contexts at 61.9% (n=83) for the later assemblage and 60.9% (n=92) for the earlier assemblage. Both assemblages contain approximately the same amount of coarse redware [Context D = 16.4% (n=22), Context E = 16.6% (n=25)]. A slight difference exists in stoneware percentages: Context D = 2.2% (n=3), Context E = 2.6% (n=4). One of the most striking contrasts between the two assemblages is found in the percentages of creamware and porcelain. Context D contains a larger percentage of creamware while Context E contains a proportionately high percentage of porcelain. Table 5.7 shows most of the porcelain wares to be decorated. Enamelled porcelain is the most popular type in Context D, 3.7% (n=5), and Context E, 9.3% (n=14).

Decoration. Four major differences can be seen in the percentages of decorative types found in Contexts D and E (see Table 5.8). The first difference is in the shell edge present. Context D contains 21.1% (n=23) shell edge, and Context E contains 14.0% (n=17). Transfer print is the most common decorative type in Contexts D and E. Context D contains 27.5% (n=30) transfer print, where as Context E contains 38.8% (n=47).

The difference between Context D and E in enamelled ware is mostly a result of the difference in porcelain wares between the two assemblages (see Table 5.7). Another difference between Context D and E is the number of undecorated vessels. This phenomena is primarily a result of the number of undecorated creamware vessels (see Table 5.7).

Table 5.6. Ceramic vessels by ware for Contexts D and E.

WARE TYPE	CONTEXT D #	CONTEXT D %	CONTEXT E #	CONTEXT E %
Pearlware	83	61.9	92	60.9
Creamware	15	11.2	9	6.0
Whiteware	2	1.5	4	0.7
Porcelain	9	6.7	19	12.6
Refined Redware	0	0.0	1	0.7
Coarse Redware	22	16.4	25	16.6
Stoneware	3	2.2	4	2.6
TOTAL	**134**	**100**	**151**	**100**

Table 5.7. Creamware and porcelain by decoration.

WARE/DECORATION	CONTEXT D #	CONTEXT D %T	CONTEXT D %W	CONTEXT E #	CONTEXT E %T	CONTEXT E %W
Creamware Painted	2	1.5	13.3	2	1.3	22.2
Creamware Undecorated	13	9.7	86.7	7	4.6	77.8
CREAMWARE TOTAL	15	11.2	100	9	6.0	100
Porcelain Enamelled	5	3.7	55.6	14	9.3	73.7
Porcelain Undecorated	1	0.7	11.1	0	0.0	0.0
Porcelain Painted	2	1.5	22.2	3	2.0	15.8
Porcelain Molded	1	0.7	11.1	1	0.7	5.3
Porcelain Transfer	0	0.0	0.0	1	0.7	5.3
PORCELAIN TOTAL	9	6.7	100	19	12.6	100

%T = Percentage of total assemblage. %W = Percentage of individual ware type.

Table 5.8. Refined ceramics by decoration for Contexts D and E.

DECORATION	CONTEXT D #	CONTEXT D %	CONTEXT E #	CONTEXT E %
Shell Edge	23	21.1	47	11.6
Transfer Print	30	27.5	47	38.8
Painted	23	26.6	28	23.1
Enamelled	5	4.6	14	11.6
Dipped	5	4.6	[illegible]	5.8
Sponge	1	0.6	0	0.0
Molded	2	4.6	7	0.8
Undecorated	14	12.8	7	[illegible].8
Other/Unidentified	0	0.0	0	0.0
TOTAL	**109**	**100**	**121**	**100**

Vessel Form

Tableware. Tableware is the second largest functional group for both of the early contexts, comprising nearly a third of the total assemblage in both cases (Table 5.10). Plates are the predominant form. The tableware category of plates totaled 81.4% (n=35) of Context D and 73.9% (n=34) of Context E. Both contexts contain a variety of plate sizes as well. The two plate assemblages appear to be very similar until they are compared according to decorative type.

Table 5.9 shows the differences between the two plate assemblages in terms of decorative type. The greatest contrasts between the assemblages are in shell edge, transfer print, and undecorated. Shell edge plates are abundant in both assemblages, but the overall proportion is greater in Context D, 65.7% (n=23), as compared to Context E, 44.1% (n=15). The two assemblages also vary considerably in the percentage of transfer printed wares present. Context E contains over three times as many transfer printed plates by percentage (35.3%, n=12), compared to Context D (11.4%, n=4). A third difference between the two plate assemblages is the volume of undecorated wares present. Undecorated wares in Context D (20%, n=7) are more than double the proportion in Context E (8.8%, n=3).

Table 5.9. Plates by decorative type for Contexts D and E.

PRIMARY TYPE	CONTEXT D #	CONTEXT D %	CONTEXT E #	CONTEXT E %
SHELL	23	65.7	15	44.1
TRANSFER	4	11.4	12	35.3
UNDECORATED	7	20.0	3	8.8
*PORCELAIN	1	2.9	2	5.9
MOLDED	0	0.0	1	2.9
OTHER	0	0.0	1	2.9
TOTAL	35	100	34	100

* Porcelain is used in association with white earthenware decorative types because porcelain outweighs earthenwares in monetary or aesthetic value no matter what the decorative type on the earthenware.

Another difference exists in the percentage of bowls present. The overall percentage of bowls within the assemblage is relatively small. Bowls do, however, represent a moderate proportion of the tableware in both cases. The percentage of bowls in Context E, 17.4% (n=8), is nearly twice that contained in Context D, 9.3% (n=4).

Teaware. The largest functional group analyzed for both contexts is teaware. The overall percentage of teaware is similar for Context D (37.3%, n=50) and Context E (43.0%, n=65). Table 5.10 shows saucers to be more abundant than cups in both assemblages. Intriguing differences are visible when the two teaware assemblages are compared by decorative type (Table 5.11).

Table 5.10. Ceramics by vessel form for Contexts D and E.

FUNCTIONAL CATEGORY	FORM	CONTEXT D			CONTEXT E		
		#	%F	%T	#	%F	%T
TABLEWARE	PLATE 10"	2	4.7	1.5	2	4.3	1.3
	PLATE 9"	1	2.3	0.7	5	10.9	3.3
	PLATE 9"	1	2.3	0.7	3	6.5	2.0
	PLATE 7"	2	4.7	1.5	3	6.5	2.0
	PLATE 6"	0	0.0	0.0	1	2.2	0.7
	PLATE 3-5"	3	7.0	2.2	0	0.0	0.0
	PLATE UNID DIAM.	26	60.5	19.4	20	43.5	13.2
	PLATE TOTAL	35	81.4	26.1	34	73.9	22.5
	PLATTER	2	4.7	1.5	8	2.2	0.7
	FLATWARE	2	4.7	1.5	2	4.3	1.3
	TUREEN	0	0.0	0.0	0	0.0	0.0
	BAKER	0	0.0	0.0	0	0.0	0.0
	PITCHER	0	0.0	0.0	1	2.2	0.7
	BOWL 6"	2	0.7	1.5	0	8.7	2.6
	BOWL 5"	1	2.3	0.7	0	0.0	0.0
	BOWL UNID DIAM.	1	2.3	0.7	4	8.7	2.6
	BOWL TOTAL	4	9.3	3.0	8	17.4	5.3
SUB TOTAL		43	100	32.1	46	100	30.5
TEAWARE	TEACUP	21	42.0	15.7	28	43.1	18.5
	SAUCER	27	54.0	20.1	34	52.3	22.5
	TEAPOT	0	0.0	0.0	2	3.0	1.3
	CREAMER	2	0.0	1.5	1	1.5	0.7
SUB TOTAL		50	100	37.3	65	100	43.0
STORAGE WARE	CROCK	9	50.0	6.7	13	68.4	8.6
	BOWL	0	0.0	0.0	0	0.0	0.0
	JUG	2	11.1	1.5	1	5.3	0.7
	BOTTLE	0	0.0	0.0	0	0.0	0.0
	BAKING DISH	7	39.9	5.2	5	26.3	3.3
SUB TOTAL		18	100	13.4	19	100	12.6
OTHER/ UNIDENT.	FLOWER POT	1	1.5	0.7	0	0.0	0.0
	HOLLOWWARE	18	72.7	11.9	17	81.0	11.3
	FLATWARE	0	0.0	0.0	1	4.3	0.7
	OTHER	0	0.0	0.0	0	0.0	0.0
	LID	0	0.0	0.0	0	0.0	0.0
	UNKNOWN	6	27.3	4.5	3	14.3	2.0
SUB TOTAL		22	100	16.4	21	100	13.9
TOTAL		134	-	100	151	-	100

%F = Percentage of functional category %T = Percentage of total assemblage

Table 5.11. Teaware by decoration for Contexts D and E.

PRIMARY TYPE	CONTEXT D #	%	CONTEXT E #	%
PAINTED	26	52.0	21	31.8
TRANSFER	18	36.0	27	40.9
UNDEC.	2	4.0	1	1.5
*PORC.	4	8.0	16	24.2
LUSTRE	0	0.0	1	1.5
TOTAL	50	100	66	100

* Porcelain is used in association with white earthenware decorative types because porcelain outweighs earthenwares in monetary or aesthetic value no matter what the decorative type on the earthenware.

One of the major differences is in the proportion of porcelain. Context E contains three times as much porcelain teaware (24.2%, n=16) as Context D (8.0%, n=4).

A second difference is in the larger percentage of painted teas present in Context D (52.0%, n=26) as compared to Context E (33.9%, n=21). Both contexts also contain a sizable and similar percentage of transfer printed teaware, Context D (36.0%, n=18) and Context E (40.9%, n=27).

Storage and Kitchen Ware. Storage and kitchen ware is the smallest functional category for both assemblages. The most abundant form present is the crock, representing 50% (n=9) of Context D and 68.4% (n=13) of Context E. The second most common form present in both assemblages are baking dishes. Context D exhibits a slightly larger percentage of baking dishes (38.9%, n=7) compared to Context E (26.3%, n=5). A complete list of storage and kitchen ware present is given in Table 5.10.

Other or Unidentified Vessels. The largest group in this category is hollowware vessels that could not be identified to an exact form. Hollowware vessels represent 11.9% (n=16) of all of the vessels in Context D and 11.3% (n=17) of Context E.

Matching vessels. Tables 5.12 and 5.13 contain a summary of the matching vessels present in Contexts D and E. As the tables show, both contexts contain a number of matching vessels. All of these vessels are teaware. Context D contains five instances of matching teaware vessels, and Context E contains seven. Most of these vessels from Context E are transfer print, 71.4% (n=5), whereas painted vessels are most common in Context D, 60% (n=3). Although most of the occurrences are only two vessels, each context has one set containing more than two vessels. The largest set of matching vessels is the transfer print and gilded set from Context E (see Figure 5.2).

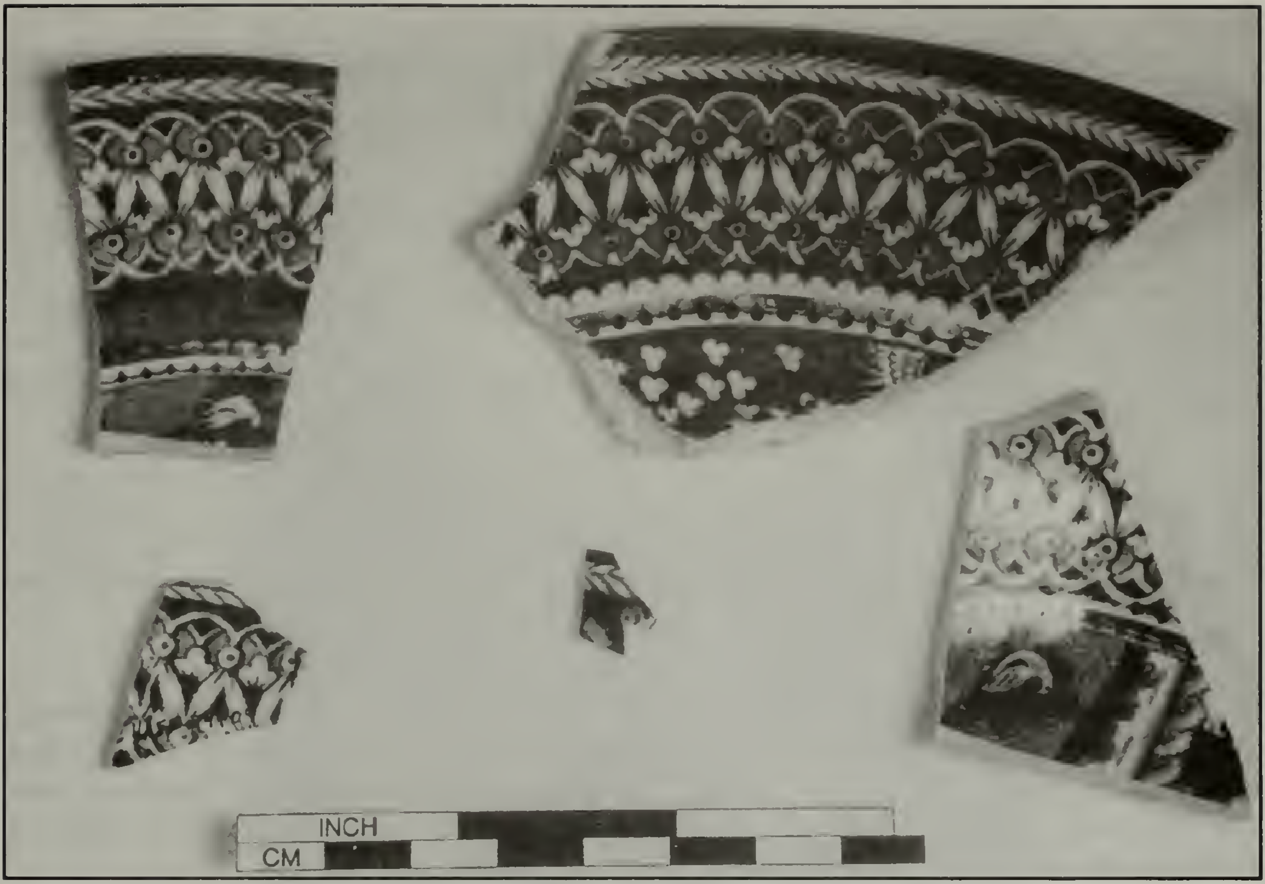

Figure 5.2. Gilding over transfer print teaware set from Context E.

Table 5.12. Matching vessels from Context D.

SET	DECORATION	FORMS
A TEA	PAINTED DARK BLUE, FLORAL	1 TEACUP, 2 SAUCERS
B TEA	PAINTED ORANGE, BROWN, AND GREEN	1 TEACUP, 1 SAUCER
C TEA	PAINTED BROWN, ORANGE, GREEN	1 TEACUP, 1 SAUCER
D TEA	TRANSFER PRINT, BLUE	1 TEACUP, 1 SAUCER
E TEA	TRANSFER PRINT, BLUE ENGLISH LANDSCAPE	1 TEACUP, 1 SAUCER

Table 5.13. Matching vessels from Context E.

SET	DECORATION	FORMS
F TEA	PAINTED ORANGE, BROWN, GREEN, YELLOW	1 TEACUP, 1 SAUCER
G TEA	PAINTED YELLOW, BROWN, ORANGE, AND GREEN	1 TEACUP, 1 SAUCER
H TEA	TRANSFER PRINT LANDSCAPE, BLUE	1 TEACUP, 1 SAUCER
I TEA	"	1 TEACUP, 1 SAUCER
J TEA	TRANSFER PRINT AND GILDED, BLUE	2 TEACUPS, 3 SAUCERS
K TEA	TRANSFER PRINT LANDSCAPE, BLUE	1 TEACUP, 1 SAUCER
L TEA	"	1 TEACUP, 1 SAUCER

Cutlery in Contexts D and E

Another interesting set of data is the various cutlery pieces present in the assemblage. These include both table knives and forks used in conjunction with the ceramic vessels. Most of the cutlery pieces were found in Context E. Context E contained three forks and two knives and Context D contained only one knife. One interesting point about the pieces in Context E is that all the forks present were of the two pronged variety.

Summary of Data from Contexts D and E

The two earliest components yielded the most ceramic data recovered from the site. Both of these contexts contain a sample size adequate enough for reasonable comparisons. Comparisons of ceramics from Contexts D and E revealed both similar and dissimilar traits. Overall functional percentages were similar for all categories. Some major differences, however, are apparent when the functional groups are analyzed according to decoration.

The major discrepancy between the assemblages lies in the higher quality of ceramics present in Context E as compared to Context D. This difference in quality is evident in the large percentage of transfer printed plates in Context E compared with a greater percentage of undecorated plates in Context D. Another example of a greater preponderance of higher quality vessels in Context E can be seen in the larger percentage of porcelain teas in Context E contrasted with a greater proportion of painted teas present in Context D (see Figures 5.3 and 5.4).

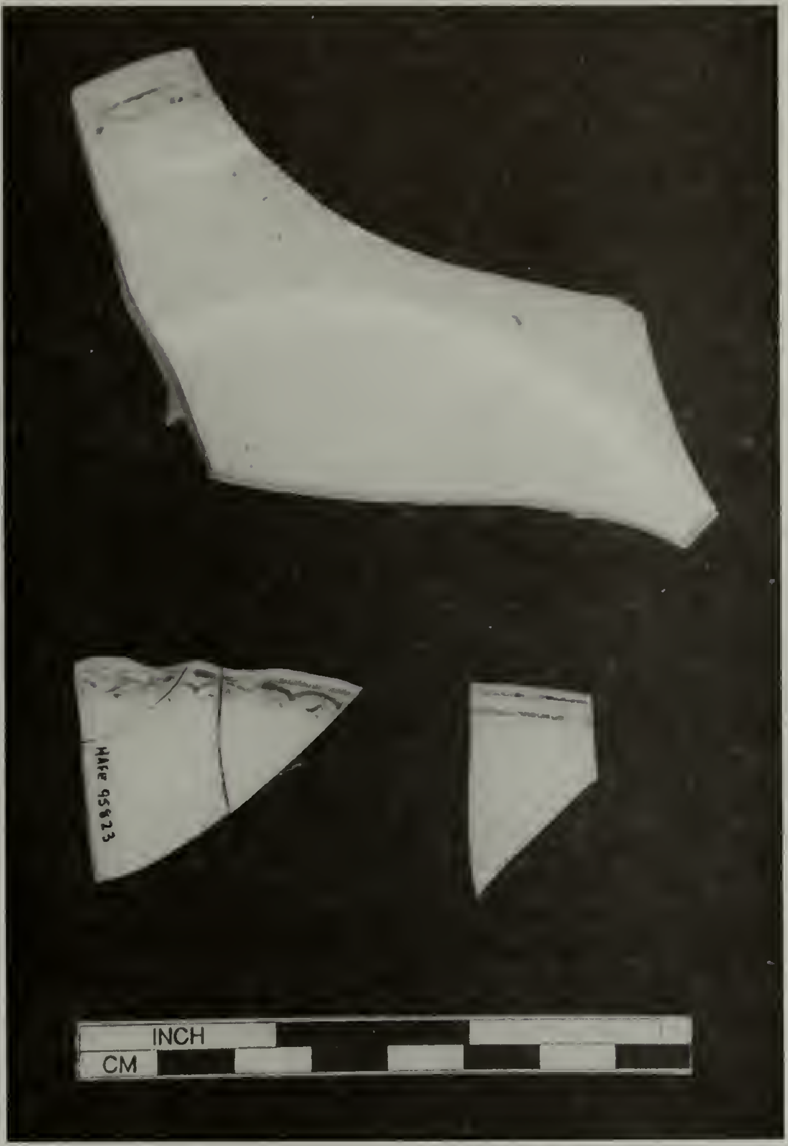

Figure 5.3. Enamelled porcelain teaware from Context E.

DISCUSSION

The following discussion focuses on the two earliest assemblages, Contexts D (1841/44 to 1852) and E (1821/1832 to 1841/44), which are attributed to the occupation of Park Building 48 by armory workers during the first half of the nineteenth century. The history of site occupation illustrates that the property had many occupants, although they are generally unknown until the 1840s. Sometime between 1841 and 1844 the structure was converted into a duplex accommodating several families. For these reasons, attributing Contexts D and E to specific individuals is virtually impossible. Some intriguing hypotheses can be proposed,

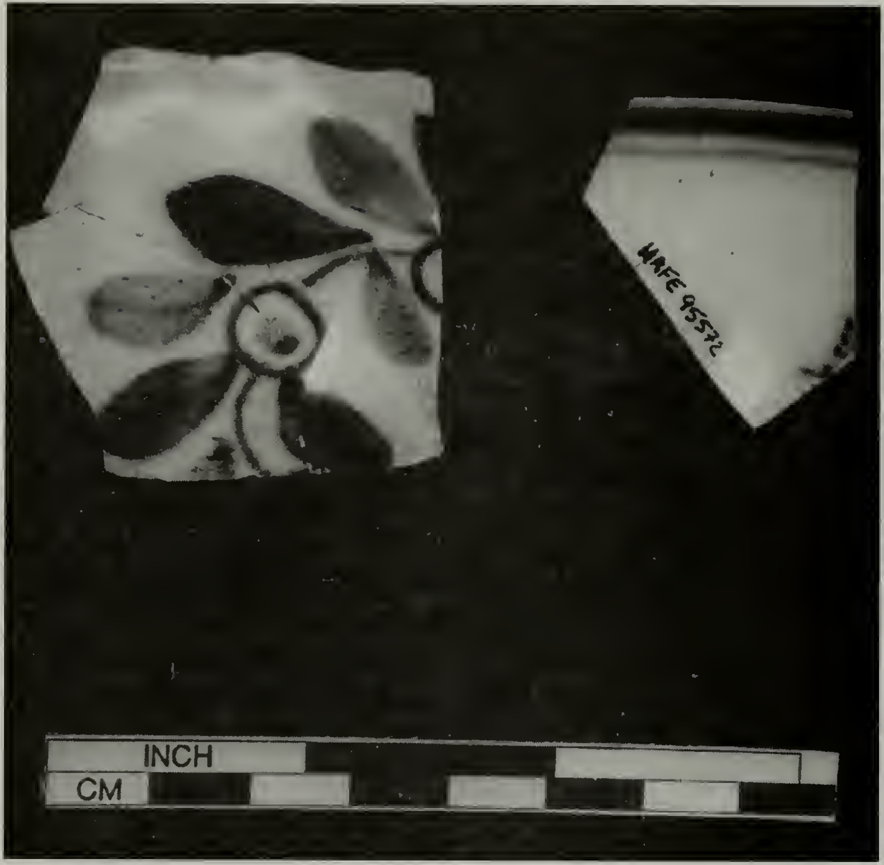

Figure 5.4. Painted pearlware teacups from Context D.

however, given the current data. Pressures within Harpers Ferry were working to transform the armory and the community into an industrialized environment. By the 1830s industrialists at the national armory began to implement more rigid work discipline. This attempt to convert the armory from craft to industrial production was met with considerable resistance by the workers who were accustomed to quota procedures. Some people within the community resisted this change along with other social control movements such as religion, education, and temperance.

The differences between the two assemblages at Park Building 48 can yield important insights into the everyday lives of the armory workers' families. One major overall difference between the assemblages is the higher quality of wares present in Context E compared to the later Context D. The plate assemblages from the two contexts are very dissimilar in composition. The greater percentage of undecorated creamware in Context D is a striking contrast to the large percentage of transfer printed plates in Context E. This higher quality in ceramic wares can also be seen in the higher percentage of porcelain teaware in Context E. These data could suggest that the inhabitants of Park Building 48 during the early occupation were fairly well off financially. It is possible that William Smallwood, an armory worker, may have been living in the residence during this early period. It is also possible that the residents were another family with the capital and desire to purchase and display the more expensive ceramic items.

The types of ceramics found in Context E are fashionable types for the period (see Figures 5.5 and 5.6). Most of the transfer printed wares found in Context E were the dark blue variety popular during the 1820s (Miller 1991:9). These wares were specifically named in local advertisements of that period (*Farmers Repository* 14 May 1823:3). On the other hand Context D contained a large quantity of unfashionable wares. Creamware, considered outdated by the 1830s, was found primarily in utilitarian forms such as bowls or mugs (Miller 1991:5). The higher percentage of undecorated creamware present in Context D may represent less of an emphasis on fashion at the table (see Figure 5.7).

The ceramic vessels from Context D could have belonged to any of the armorer's families who occupied the building from 1841 to 1852. This phenomenon leaves the assemblage open to many interpretations. The Shope family may serve as an example of an armory workers' household inhabiting the structure.

Little historical data has been located pertaining to the Shope family. There is, however, a good sample of his purchases at a local drygoods store found in a Harpers Ferry store ledger dating from 1837 to 1839 (Appendix 5.B). Missing rent rolls make it uncertain if Shope lived in Park Building 48 in the late 1830s, although he is there from 1841 to 1844. Besides the fact that the Shopes were paying a relatively high rent for their dwelling in the 1840s, the ledger

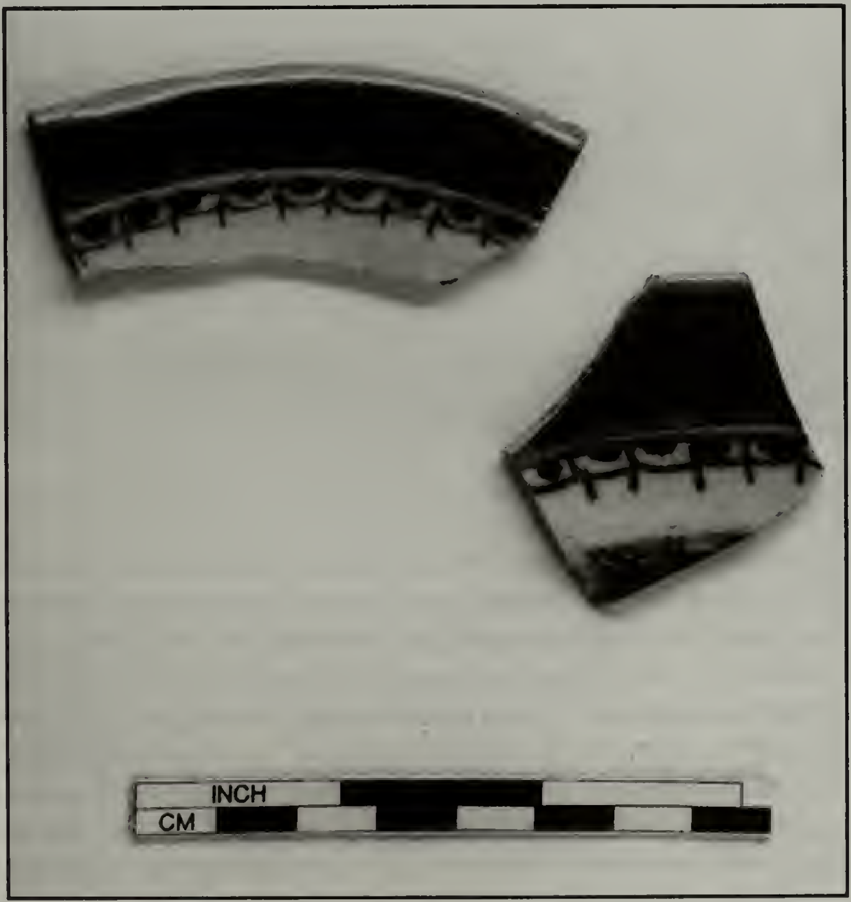

Figure 5.5. Chinese Export porcelain plates from Context E.

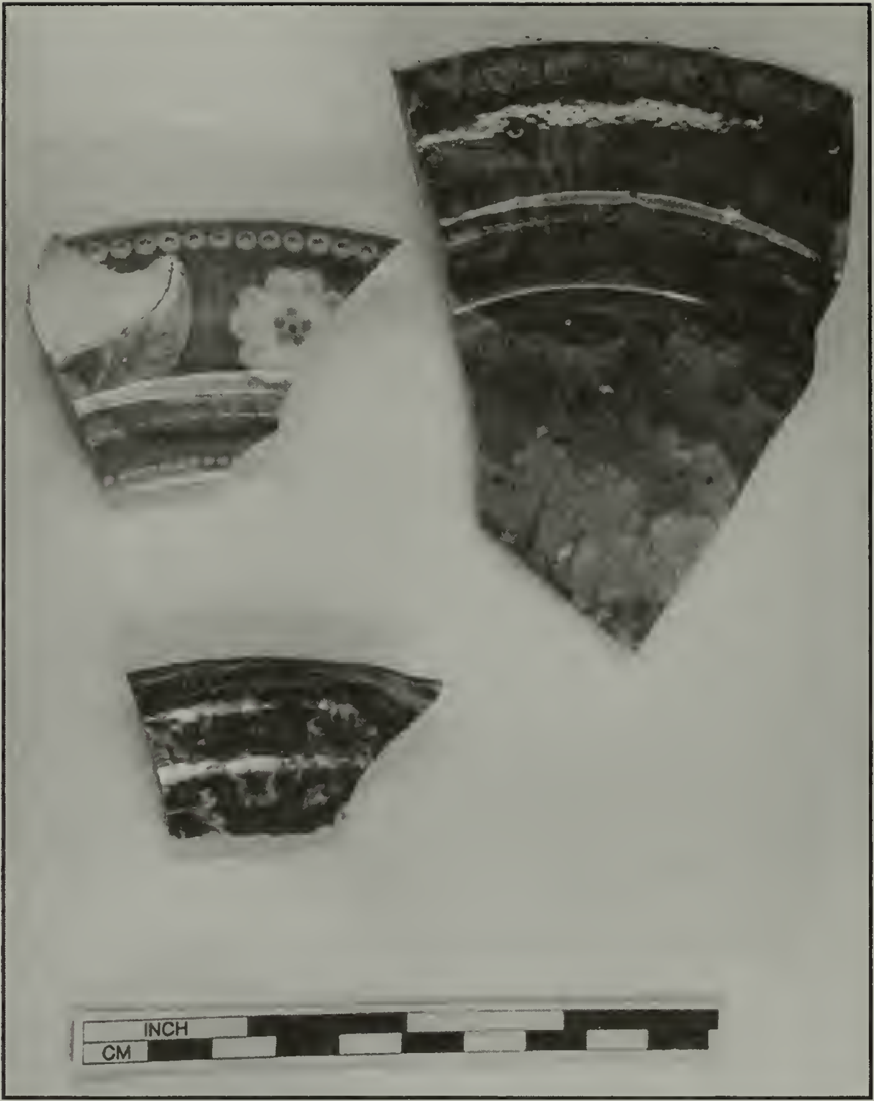

Figure 5.6. Blue transfer printed plates from Context E.

indicates they also purchased more expensive store goods. One example is that they purchased the more expensive brandy instead of whiskey preferred by most armory workers (see Appendix 5.C). A lack of abundant clean drinking water, especially in early nineteenth-century rural areas, promoted whiskey as part of the American diet (Rorabaugh 1979:95-96). Since Harpers Ferry lacked an abundant supply of sanitary drinking water during the early nineteenth century, it is probable that alcohol served as an immediate alternative (Smith 1977:77).

Another factor contributing to the widespread appeal of whiskey was its low cost. During the early nineteenth century, however, many members of the upper class preferred fermented beverages, such as wine, because of its high social status (Rorabaugh 1979:100). The consumption of brandy by the Shope family may be an attempt to situate themselves within a particular social class. The Shopes may have also simply preferred a less intoxicating drink.

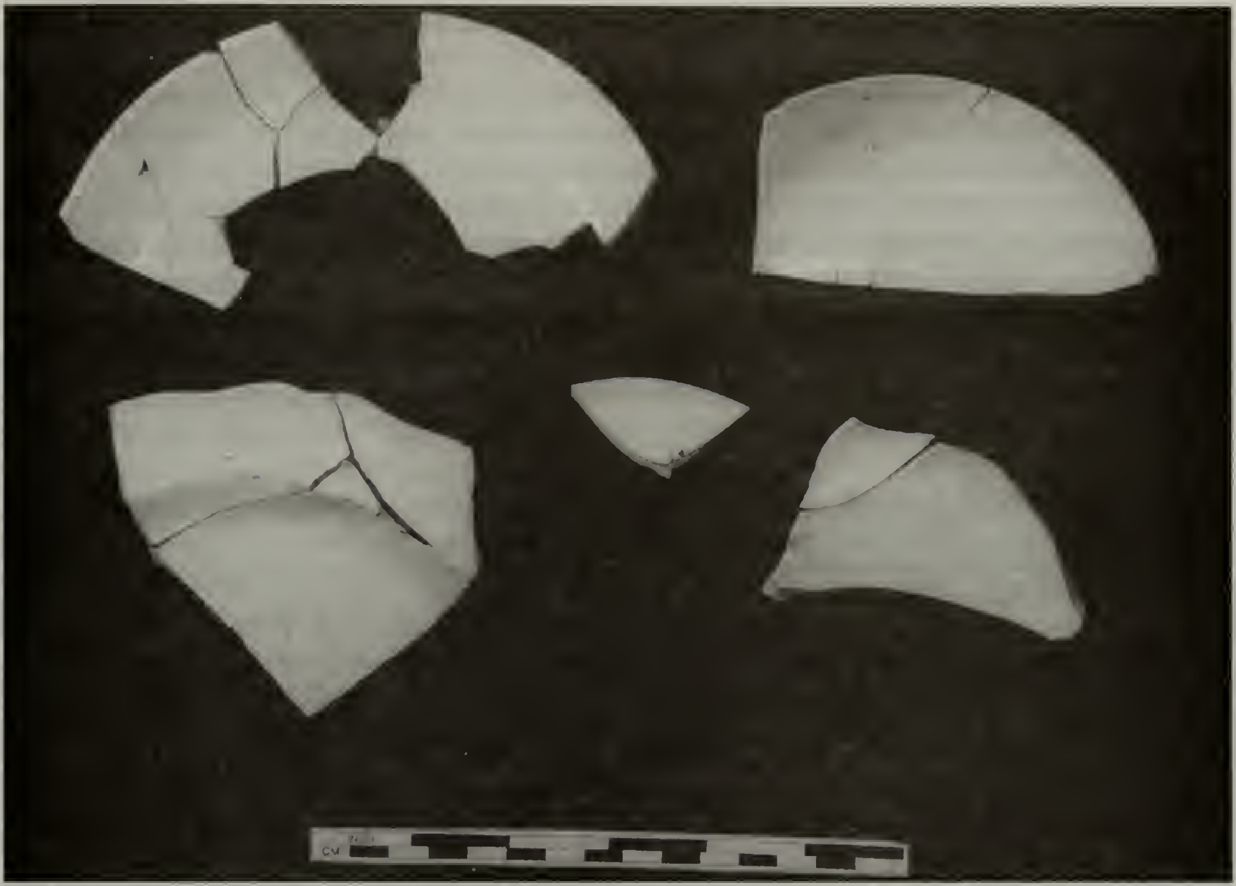

Figure 5.7. Undecorated creamware vessels from Context D.

The status associated with brandy consumption is inconsistent with the use of undecorated creamware table plates that are abundant in the later assemblage associated partially with the Shope's.

According to the ledger, the Shopes were buying the more expensive ceramic items at the store. Table 5.14 shows that a set of plates purchased by the Shopes was the most expensive kind listed in the ledger. Column four of Table 5.14 shows that the least expensive set of 1/2 dozen plates was 31 cents, followed by 50 cents, and the set purchased by the Shope family at 87 cents. Considering that creamware was unfashionable and the cheapest ware available, it is unlikely that this purchase would have consisted of creamware plates similar to those in the Context D assemblage. The "lower status" wares present in Context D could also represent an attempt to associate or disassociate with a particular class or group of individuals or a desire to cling to the status quo and tradition.

An interesting point about the early assemblage, Context E, is the presence of two-pronged forks. During the 1830s, the two-pronged fork, associated with left handed eating, was replaced by the three- and four-pronged variety (Kasson 1990:189). When the style of eating shifted to the practice of transferring the fork to the right hand after cutting a piece of food, the two-pronged fork itself became a symbol of vulgarity (Kasson 1990:191). The presence of two pronged forks in Context E may represent a desire to cling to the unfashionable practice of left handed eating. This practice of not crossing your fork over to the right hand may have been popular throughout Harpers Ferry during the period of site occupation. It is possible that some of the two pronged forks from Context E may have been carving forks. Two of the forks, however, appear to have been too small for carving forks.

The use of two-pronged forks seems to be a sharp contrast to the fashionable ceramic wares present in Context E. The large percentage of porcelain teaware and transfer printed tableware in Context E may represent a significant status statement within Harpers Ferry. On the other hand, the presence of two-pronged forks may represent the rejection of some new ideas, innovations, and social control mechanisms (i.e., temperance movement, work discipline, dining etiquette, religion, education) by the residents of Harpers Ferry.

Table 5.14. Refined ceramic purchases located in an 1837 to 1839 store ledger from Harpers Ferry.

SALE UNIT DESCRIPTION	NUMBER	UNIT COST IN DOLLARS	AVERAGE COST
Set of Cups and Saucers	4	4@ .31	.31
Set of Plates	2	2@ .63	.63
1 Doz. Plates	2	1@ 1.00; 1@ .75	.88
1/2 Doz. Plates	3	** 1@ .87; 1@ .31; 1@ .50	.56
1/2 Doz. Cup Plates	1	1@ .31	.31
Single Plates	4	1@ .19	.19
Set of China	4	1@ 1.00	1.00
Dish	7	3@ .15; 1@ .50; 1@ .19; 2@ .375	.27
Bowl	7	1@ .63; 2@ .16; 3@ .10; 1@ .19	.21
Mug	4	2@ .06; 1@ .39; 1@ .10	.15
Pitcher	6	1@ ?; 1 @ .19; 1@ .20 1@ .31; 1@ .39; 1@ .63	.43
Chamber Pot	4	4@ .38	.38
Wash Bowl	4	1@ .08	.08

** Denotes set purchased by Augustus Shope

CONCLUSION

Many interpretations of the ceramic data presented are possible, while only a fraction of these possibilities have been explored in this chapter. One intriguing occurrence is the presence of the generally unpopular undecorated creamware plates in Context D (1840s to 1850s). The greater proportion of creamware vessels could be the result of a number of consumer behaviors. One explanation is that there was less of an emphasis on the presentation of the meal and a greater attention to the composition of the food served during the period of Context D. This could be associated with social group membership. The armorer families living in the building may have desired to separate and disassociate themselves from the upper classes and their behaviors at the table, rather than emulate them. The purchase of these unpopular ceramic wares also may have been partially a result of simple economics.

Another interesting phenomena is the possible use of unfashionable two-pronged forks along with the highly fashionable porcelain and transfer printed ceramic wares during the 1820s and 1830s (Context E). This seemingly anomalous pattern may reflect resistance to a new dining behavior discipline by the armory workers' households.

The data discussed above mark an opportunity to address greater societal issues in Harpers Ferry. One of the issues examined is the possible measure of resistance to innovation and the discipline of industrialization through the archeological record.

APPENDIX 5.A

SUMMARY OF ALL CERAMIC VESSELS FROM PARK BUILDING 48 BY FORM, DECORATION, AND WARE TYPE

Table 5.A.1. Summary of all ceramic vessels from Park Building 48 for Contexts A, B, C, D, and E.

FUNCTIONAL CATEGORY	VESSEL FORM	WARE TYPE	DECORATION	CONTEXT A		CONTEXT B		CONTEXT C		CONTEXT D		CONTEXT E	
				#	%	#	%	#	%	#	%	#	%
TABLEWARE	PLATE 10"	PEARLWARE	EDGED	1	1.2	0	-.-	0	-.-	2	1.3	1	0.7
	PLATE 10"	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	0	-.-	●	0.7
	PLATE 9"	WHITEWARE	UNDECORATED	3	3.5	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE 9"	PEARLWARE	EDGED	●	1.2	0	-.-	0	-.-	1	0.7	6	4.0
	PLATE 9"	WHITEWARE	GILDED	●	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE 8"	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	PLATE 9"	PEARLWARE	EDGED	0	-.-	0	-.-	0	-.-	1	0.7	2	3.3
	PLATE 9"	WHITEWARE	MOLDED	●	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE 9"	WHITEWARE	SPONGE	●	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE 7"	PEARLWARE	EDGED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	PLATE 7"	CREAMWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE 9"	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	PLATE 7"	PORCELAIN	UNDECORATED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	PLATE 8"	PORCELAIN	PAINTED	0	-.-	0	-.-	0	-.-	0	-.-	●	0.7
	PLATE 9"	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	PLATE 3-5"	CREAMWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	2	1.3	0	-.-
	PLATE 3-5"	PEARLWARE	EDGED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	PLATE DIAM?	PEARLWARE	EDGED	1	1.2	0	-.-	0	-.-	17	12.7	8	5.3
	PLATE DIAM?	CREAMWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	5	3.3	3	2.0
	PLATE DIAM?	WHITEWARE	TRANSFER	6	7.0	1	4.3	2	22.2	0	-.-	0	-.-
	PLATE DIAM?	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	3	2.2	6	4.0
	PLATE DIAM?	PEARLWARE	PAINTED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	PLATE DIAM?	PEARLWARE	MOLDED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	PLATE DIAM?	PORCELAIN	PAINTED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	PLATE DIAM?	BONECHINA	MOLDED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	PLATE DIAM?	WHITEWARE	DECAL	2	2.3	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE DIAM?	WHITEWARE	MOLDED	3	2.3	2	8.7	0	-.-	0	-.-	0	-.-
	PLATE DIAM?	WHITEWARE	GILDED	2	2.3	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE DIAM?	IRONSTONE	MOLDED	2	2.3	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE DIAM?	MAJOLICA	MOLDED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	PLATE DIAM?	WHITEWARE	UNDECORATED	2	2.3	0	-.-	1	11.1	0	-.-	0	-.-
	PLATE DIAM?	WHITEWARE	EDGED	0	-.-	0	-.-	1	11.1	0	-.-	0	-.-
	BAKER	IRONSTONE	UNDECORATED	●	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	PLATTER	WHITEWARE	MOLDED	0	-.-	0	-.-	0	-.-	0	-.-	0	-.-
	PLATTER	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	2	1.5	0	-.-
	PLATTER	PEARLWARE	EDGED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	TUREEN	WHITEWARE	MOLDED	●	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	BOWL	WHITEWARE	UNDECORATED	2	2.3	0	-.-	0	-.-	0	-.-	0	-.-
	BOWL	WHITEWARE	MOLDED	●	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	BOWL	IRONSTONE	UNDECORATED	3	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	BOWL	WHITEWARE	PAINTED	0	-.-	1	4.3	0	-.-	0	-.-	0	-.-
	BOWL	PORCELAIN	MOLDED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	BOWL	PEARLWARE	DIPPED	0	-.-	0	-.-	0	-.-	2	1.5	5	3.3
	BOWL	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	1	0.7	2	1.3
	BOWL	CREAMWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	1	0.7	1	0.7
	PITCHER	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	0	-.-	●	0.7
	FLATWARE	WHITEWARE	UNDECORATED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	FLATWARE	WHITEWARE	TRANSFER	0	-.-	1	4.3	0	-.-	0	-.-	0	-.-
	FLATWARE	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	FLATWARE	CREAMWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	FLATWARE	PEARLWARE	EDGED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	FLATWARE	PEARLWARE	PAINTED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
SUBTOTAL				35	40.7	5	21.7	4	44.4	43	32.1	46	30.5

Appendix 5.A.1. Continued.

FUNCTIONAL CATEGORY	VESSEL FORM	WARE TYPE	DECORATION	CONTEXT A		CONTEXT B		CONTEXT C		CONTEXT D		CONTEXT E	
				#	%	#	%	#	%	#	%	#	%
TEAWARE	CUP	PORCELAIN	ENAMELLED	0	-.-	1	4.3	0	-.-	2	1.5	7	4.0
	CUP	PORCELAIN	PAINTED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	CUP	BONE CHINA	TRANSFER	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	CUP	PORCELAIN	UNDECORATED	0	-.-	1	4.3	0	-.-	0	-.-	0	-.-
	CUP	PEARLWARE	PAINTED	0	-.-	0	-.-	0	-.-	11	5.2	8	5.3
	CUP	PEARLWARE	TRANSFER	1	1.2	0	-.-	0	-.-	7	5.2	11	7.3
	CUP	CREAMWARE	UNDECORATED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	CUP	CREAMWARE	PAINTED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	CUP	WHITEWARE	TRANSFER	1	1.2	1	4.3	0	-.-	0	-.-	0	-.-
	CUP	WHITEWARE	UNDECORATED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	CUP	WHITEWARE	MOLDED	0	-.-	1	4.3	0	-.-	0	-.-	0	-.-
	CUP	WHITEWARE	SPRIG PAINTED	0	-.-	1	4.3	0	-.-	0	-.-	0	-.-
	SAUCER	PORCELAIN	GILDED	0	-.-	2	8.7	0	-.-	0	-.-	0	-.-
	SAUCER	PORCELAIN	ENAMELLED	0	-.-	0	-.-	0	-.-	2	1.5	6	4.0
	SAUCER	PORCELAIN	PAINTED	0	-.-	0	-.-	0	-.-	1	0.7	1	0.7
	SAUCER	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	10	7.5	14	9.3
	SAUCER	PEARLWARE	PAINTED	0	-.-	0	-.-	0	-.-	12	9.0	11	9.3
	SAUCER	CREAMWARE	PAINTED	0	-.-	0	-.-	0	-.-	1	0.7	1	0.7
	SAUCER	CREAMWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	SAUCER	WHITEWARE	UNDECORATED	2	2.3	0	-.-	0	-.-	0	-.-	0	-.-
	SAUCER	WHITEWARE	PAINTED	0	-.-	1	4.3	1	11.1	0	-.-	0	-.-
	SAUCER	WHITEWARE	SPRIG PAINTED	0	-.-	1	4.3	0	-.-	0	-.-	0	-.-
	SAUCER	WHITEWARE	DECAL	6	7.0	0	-.-	0	-.-	0	-.-	0	-.-
	SAUCER	WHITEWARE	TRANSFER	2	2.3	0	-.-	0	-.-	0	-.-	1	0.7
	CREAMER/SUGAR	CREAMWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	1	0.7	1	0.7
	CREAMER/SUGAR	WHITEWARE	TRANSFER (OVERGLAZE)	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	TEAPOT	PORCELAIN	ENAMELLED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	TEAPOT	REFINED REDWARE	LUSTRE	0	-.-	0	-.-	0	-.-	0	-.-	[illegible]	0.7
SUBTOTAL				14	16.3	9	39.1	1	11.1	50	37.3	65	43.0
KITCHEN/ STORAGE WARE	BOWL	YELLOWWARE	UNDECORATED	3	3.5	0	-.-	0	-.-	0	-.-	0	-.-
	BOWL	YELLOWWARE	SLIPPED	1	1.2	1	4.3	0	-.-	0	-.-	0	-.-
	BOTTLE	REFINED STONEWARE	UNDECORATED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	PIE PLATE	REDWARE	SLIPPED	0	-.-	0	-.-	0	-.-	7	5.2	[illegible]	3.3
	PIE MOLD	REDWARE	UNDECORATED	0	-.-	0	-.-	1	11.1	0	-.-	0	-.-
	CROCK/JAR	REDWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	0	0.7	11	7.3
	CROCK/JAR	GREY STONEWARE	SALT GLAZE	0	-.-	0	-.-	0	-.-	0	-.-	[illegible]	1.3
	FLOWERPOT	REDWARE	UNDECORATED	6	7.0	0	-.-	0	-.-	0	-.-	0	-.-
	JUG	BROWN STONEWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	[illegible]	0.7	0	-.-
	JUG	GREY STONEWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	1	0.7	1	0.7
SUBTOTAL				11	12.8	1	4.3	1	11.1	18	13.4	19	12.6

Appendix 5.A.1. Continued.

FUNCTIONAL CATEGORY	VESSEL FORM	WARE TYPE	DECORATION	CONTEXT A		CONTEXT B		CONTEXT C		CONTEXT D		CONTEXT E	
				#	%	#	%	#	%	#	%	#	%
OTHER/ UNIDENTIFIED	HOLLOWWARE	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	2	1.3	3	2.0
	HOLLOWWARE	PEARLWARE	PAINTED	0	-.-	0	-.-	0	-.-	1	0.7	2	1.3
	HOLLOWWARE	PEARLWARE	DIPPED	0	-.-	0	-.-	0	-.-	1	2.2	2	1.3
	HOLLOWWARE	PEARLWARE	SPONGE	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	HOLLOWWARE	WHITEWARE	DIPPED	2	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	WHITEWARE	GILDED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	WHITEWARE	PAINTED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	WHITEWARE	UNDECORATED	1	1.2	1	4.3	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	IRONSTONE	MOLDED	0	-.-	0	-.-	1	11.1	0	-.-	0	-.-
	HOLLOWWARE	IRONSTONE	UNDECORATED	0	-.-	0	-.-	1	11.1	0	-.-	0	-.-
	HOLLOWWARE	WHITEWARE	TRANSFER	1	1.2	2	8.7	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	ROCKINGHAM	MOLDED	0	-.-	0	-.-	1	11.1	0	-.-	0	-.-
	HOLLOWWARE	PORCELAIN	TRANSFER	2	2.3	0	-.-	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	PORCELAIN	DECAL	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	BONE CHINA	ENAMELLED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	BONE CHINA	TRANSFER	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	HOLLOWWARE	CREAMWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	1	3.0	2	1.3
	HOLLOWWARE	REDWARE	UNDECORATED	3	3.5	0	-.-	0	-.-	1	2.2	[illegible]	2.6
	HOLLOWWARE	REDWARE	SLIPPED	0	-.-	1	4.3	0	-.-	1	0.7	3	2.0
	HOLLOWWARE	GREY STONEWARE	UNDECORATED	3	3.5	3	13.0	0	-.-	1	0.7	1	0.7
	CHILD'S SAUCER	PORCELAIN	UNDECORATED	2	2.3	1	4.3	0	-.-	0	-.-	0	-.-
	UNIDENTIFIED	PORCELAIN	PAINTED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	UNIDENTIFIED	PORCELAIN	ENAMELLED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	UNIDENTIFIED	PORCELAIN	UNDECORATED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	UNIDENTIFIED	PORCELAIN	PAINTED	1	1.2	0	-.-	0	-.-	0	-.-	0	-.-
	UNIDENTIFIED	PORCELAIN	MOLDED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	UNIDENTIFIED	PEARLWARE	TRANSFER	0	-.-	0	-.-	0	-.-	2	1.3	2	1.3
	UNIDENTIFIED	CREAMWARE	PAINTED	0	-.-	0	-.-	0	-.-	1	0.7	0	-.-
	UNIDENTIFIED	WHITEWARE	PAINTED	2	2.3	0	-.-	0	-.-	1	0.7	0	-.-
	UNIDENTIFIED	WHITEWARE	TRANSFER	3	3.5	0	-.-	0	-.-	0	-.-	0	-.-
	UNIDENTIFIED	REDWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
	FLATWARE	REDWARE	UNDECORATED	0	-.-	0	-.-	0	-.-	0	-.-	1	0.7
SUBTOTAL				26	30.2	8	34.8	3	13.0	22	16.4	21	13.9
TOTAL				86	100%	23	100%	9	100%	134	100%	151	100%

APPENDIX 5.B

DRYGOODS PURCHASES BY AUGUSTUS SHOPE

(Taken from a ledger of an unknown local Harpers Ferry drygoods store.
The ledger is housed in the Lockwood House, Accession # 7037,
Harpers Ferry National Historical Park, Harpers Ferry, WV.)

Table 5.B.1. Purchases by Augustus Shope from a Harpers Ferry drygoods store.

NAME	DATE	MERCHANDISE	COST
Augustus Shope	11-14-1837	amount goods to Ro?a??	3.00
"	"	10 Rio Coffee @ .16 1/3 5 sugar .63	2.29
"	11-20-1837	1 skein silk 1.00	1.00
"	11-20-1837	1 butter crackers	.13
"	11-23-1837	1 pane glass .06 1 [?] nails .09 8 yas Calico 1.33 3 Cheese @15 .45	1.93
"	11-25-1837	1 p. shoes @1.37	1.37
"	11-20-1837	10 Rio Coffee @ .16 1/3	1.67
"	11-30-1837	Merchandise as P. Day Book	1.80
"	"	1 broom	.19
"	12-01-1837	1 gallon vinegar .31 1 crackers .12 1/2	.44
"	"	1 large tub 1.25 2 sticks [tape] 6 1 skein silk .06	1.37
"	12-02-1837	1 p. black button hose	.75
"	"	1 gallon [Me] wine	.56
"	12-04-1837	2 3/4 rosin soape @.10 1/2 pepper .12 1/2	.40
"	12-05-1837	1/2 doz plates .87 1/2 6 tumblers .37 1/2	1.25
"	"	1 gallon molasses	.56
"	12-06-1837	6 Rio Coffee @ .16 1/3 1 blankets 1.25 2 yas Cassinett @ .87 1/2 1 skein silk .06 1/2 1/4 yas Muslin @ 12 1/2	4.09
"	12-07-1837	1 sackf[ine] sa[?]s	3.25
"	12-08-1837	3 cheese @ .15 1/4 1/4 starch .06 1/4	.51
"	12-07-1837	1 gallon molasses	.56
"	12-11-1837	1 bottle snuff	.25
"	"	Amt Goods P. Order	2.50
"	"	2 skein silk @ .06 1/4 1 pint brandy .25	.37
"	"	1 gallon molasses	.56

Table 5.B.1. Continued.

NAME	DATE	MERCHANDISE	COST
Augustus Shope	12-12-1837	2 1/4 yas chec[??] @ .14 1 gallon vinegar @ .31	.66
"	12-13-1837	2 doz mackerel @ .50	1.00
"	12-22-1837	1 gallon molasses @ .56 1/2 1/2 ginger .12 1/2 1/4 gallon brandy .50	1.19
"	12-23-1837	4 c[ro]cks @ .15 am[???] [lo] creamer .50	1.10
"	"	1 bush sa[l]s	1.00
"	12-27-1837	1 gallon molasses	.56
"	12-29-1837	2 doz mackerel @ .50	1.00
"	12-30-1837	1 pint brandy .31 1/4 2 gallon vinegar @ .31 1 " molasses .56	1.50
"	01-05-1838	1 p. shoes @ 1.00 1 candles 18 3/4	1.19
"	01-06-1838	1/4 bush sals @ 1.00	1.00
"	01-08-1838	6 yas ribbon @ .10 1 [ditto] .68 1/4 gallon brandy @ 2.50 1 [?] candle	1.53
"	01-10-1838	3 Rio Coffee .50 1 plug tobacco .02	.52
"	01-12-1838	4 sugar @ 12 1/2	.56
"	01-17-1838	8 yas Calico @ 12 1/2	1.00
"	04-28-1838	amount received	10.00
"	08-03-1838	amount loaned	1.00

APPENDIX 5.C

SAMPLE OF DRYGOODS PURCHASES BY TWO ARMORY WORKERS

(Taken from a ledger of an unknown local Harpers Ferry drygoods store.
The ledger is housed in the Lockwood House, Accession # 7037,
Harpers Ferry National Historical Park, Harpers Ferry, WV.)

Table 5.C.1. Purchases by armory workers from a Harpers Ferry drygoods store.

NAME	DATE	MERCHANDISE	COST
Abraham Roderick	11-18-1837	1 P. shoes @ 1.37 1/2 2 oz tobacco .06 1/4	1.44
"	11-20-1837	2 1/2 cheese @ .15 2 oz tobacco @ .06 1/4	.46
"	11-23-1837	2 oz tobacco	.06
"	"	1/2 gallon molasses .28 1/2 gallon whiskey .25	.53
"	11-24-1837	12 mackerel @ .04	.48
"	12-01-1837	1 doz mackerel	.90
"	12-04-1837	1 P. hose	.63
"	"	1/4 gallon whiskey @ 1.00	.25
"	12-05-1837	1/2 gallon molasses	.28
"	12-05-1837	1 P. boots @ 3.50	3.50
"	12-11-1837	Merchandise P. Day Book	.90
"	"	2 candles @ .16 1/3	.33
"	12-21-1837	2 rosin soape @ .10 tobacco .06	.26
"	12-22-1837	1 gallon molasses @ .56 1/2 2 brown sugar .20	1.44
"	12-[illegible]5-1837	tobacco	.06
"	12-30-1837	1 gallon molasses .56 1 pint s[???] 18 3/4	.46
"	01-04-1838	2 oz tobacco	.06
"	01-09-1838	1 candles	.16
"	01-12-1838	Amount Received	10.00
"	01-13-1838	3/4 gallon vinegar @ .31 1/4	.25
"	01-15-1838	12 yas Calico @ .12 1/2 2 oz tobacco @ .50	.25
"	01-16-1838	2 candles @ .16 1/3	.25
"	01-17-1838	1/4 gallon spirits	.37
"	01-18-1838	Merchandise P. Day Book	1.73
"	01-18-1838	1/4 tobacco @ .50	.13
"	01-20-1838	2 yas Cassinett @ .62 1/2 3 skein thread @ .01	1.28
"	01-22-1838	tobacco	.06
"	"	Merchandise as P. Day Book	.67

Table 5.C.1. Continued.

NAME	DATE	MERCHANDISE	COST
Abraham Roderick	01-23-1838	amount young lady	.75
"	01-26-1838	2 doz herring @ .12 1/2	.25
"	01-27-1838	2 doz herring @ .12 1/2 2 sugar @ .10	.45
"	01-30-1838	2 brooms @ .12 1/2	.25
"	01-31-1838	1/4 gallon rum .18 3/4 1 candles .18 3/4	.38
"	02-01-1838	2 brown sugar @ .10	.20
"	02-02-1838	2 oz tobacco	.06
"	02-03-1838	1/4 powder @ .50	.13
"	02-06-1838	1 rosin soape .10 2 sugar @ .10	.30
"	"	1/2 gallon molasses	.31
"	02-07-1838	1/2 gallon old whiskey	.25
"	02-10-1838	1/2 gallon molasses @ .31 3 Rio Coffee @ .16 1/3	.49
"	02-12-1838	2 oz tobacco @ .50	.06
"	02-13-1838	"	.06
"	02-17-1838	2 brown sugar @ .10	.20
"	02-20-1838	2 oz tobacco	.06
"	02-24-1838	Merchandise P. Day Book	.69
"	03-02-1838	sundry goods	.09
"	03-03-1838	1 p. shoes	1.00
"	"	1 candles	.17
"	03-05-1838	2 oz tobacco @ .50	.06
"	03-07-1838	2 oz tobacco	.06
"	03-06-1838	1/4 gallon molasses .16 1 doz mackerel .50	.66
"	03-10-1838	3 brown sugars @ .10 1 candles @ .16 1/3	.49
"	03-12-1838	1/2 gallon molasses .12 1/2 1/2 gallon vinegar @ .31	.47
"	03-16-1838	2 brown sugar @ .10 1/4 tea .25	.45
"	03-17-1838	1 candles	.17

Table 5.C.1. Continued.

NAME	DATE	MERCHANDISE	COST
Abraham Roderick	03-19-1838	1/2 powder @ .50 2 sha[?] .12 1/2 1/4 whiskey @ 1.00	.75
"	03-24-1838	1 p. shoes 2 oz tobacco @ .50	1.44
"	03-30-1838	1 doz mackerel	.50
"	03-31-1838	12 yas [p]enting	.06
"	04-02-1838	3 yas brown Muslin @ .11 3 plugs tobacco @ .02	.45
"	"	2 oz tobacco @ .50	.06
"	04-03-1838	2 brown sugar @ .10	.20
"	04-09-1838	1 Bea [cord]	.38
"	04-06-1838	for this amount	1.00
"	04-07-1838	2 brown sugar @ .10	.20
"	04-12-1838	2 Rio Coffee @ 16 1/3 2 brown sugar @ .10	.50
"	04-18-1838	1 bottle mustard	.13
"	"	1/2 l[???]	.19
"	04-19-1838	2 oz tobacco @ .50	.06
"	04-21-1838	"	.06
"	04-26-1838	For Amount Received of [time]	10.00
"	04-28-1838	1 p. shoes	.63
"	04-30-1838	1 paste board	.06
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"	06-07-1838	2 brown sugar @ .10	.20
"	06-09-1838	1 p. shoes	1.13
"	06-14-1838	Merchandise P. Day Book	2.48
"	"	Amount Received	10.00
"	06-14-1838	2 brown sugar @ .10	.20
"	06-18-1838	2 Rio Coffee @ .16 1/3 1 candle @ .16 1/3	.50
"	06-19-1838	2 oz tobacco @ .50	.06
"	06-20-1838	1/4 young [?] tea	.19
"	06-21-1838	2 oz tobacco @ .50	.06
"	07-06-1838	2 oz tobacco @ .50	.06

Table 5.C.1. Continued.

NAME	DATE	MERCHANDISE	COST
Abraham Roderick	07-09-1838	Merchandise P. Day Book	.59
"	"	"	1.09
"	07-13-1838	1/2 gallon molasses @ .62	.38
"	07-13-1838	Merchandise P. Day Book	.19
"	07-13-1838	2 oz tobacco @ .50	.06
"	07-16-1838	Amount Received	.38
"	07-18-1838	1/2 gallon vinegar .16 1 rosin soape .10	.26
"	07-30-1838	2 oz tobacco @ .50	.06
"	08-09-1838	2 oz tobacco	.06
"	08-18-1838	9 yas Calico @ .16 2/3	1.50
"	08-24-1838	2 oz tobacco	.06
"	08-24-1838	2 oz tobacco	.06
"	08-25-1838	Merchandise P. Day Book	1.38
"	08-27-1838	1 p. [w]orse[?] hose .50 1 p. cotton @ .31	.81
"	08-24-1838	3 brown sugar @ .11	.33
"	08-30-1838	10 brown sugar @ .11 2 oz tobacco .06	1.16
"	09-01-1838	1 Black Fur [??]as 4.50	4.50
"	08-09-1838	1 candles @ .17	.17
"	"	Amount Loaned	.25
"	09-05-1838	2 1/2 rosin soape @ .10 1/2 gallon molasses .31	.54
"	"	3 brown sugar @ .10	.30
"	"	2 oz tobacco	.06
"	09-06-1838	1 c[?]c[?] @ .13 1 p. side c[?]mas .13	.26
"	08-09-1838	1 1/2 coffee @ .16	.25
"	"	1 quart whiskey	.25
"	09-10-1838	3 quart molasses	.38
"	09-11-1838	2 1/2 brown sugar @ .10	.25
"	"	2 conleys' shelling books	.33
"	"	Amount Loaned	.50
"	09-12-1838	2 oz tobacco	.06
"	09-14-1838	Amount Received	10.00

Table 5.C.1. Continued.

NAME	DATE	MERCHANDISE	COST
Abraham Roderick	"	1/2 pack sal[?]	.13
"	09-15-1838	1 1/4 rosin soape @ .10	.13
"	09-27-1838	1 remnant cotton	1.38
"	12-08-1838	1 candles	.17
"	12-08-1838	tobacco	.07
"	12-21-1838	1/2 soap	.15
"	"	Sundries as Pay Day Book	1.38
"	12-08-1838	tobacco	.06
"	01-02-1838	1 plug tobacco	.12
"	"	1/2 gallon molasses	.31
"	"	1 plug tobacco	.06
"	"	2 Rio Coffee	.30
"	01-08-1838	1 g[??]ss screws	.63
"	01-08-1838	2 brown sugar 1 rosin soap	.22
"	01-02-1838	1/2 gallon molasses	.30
"	01-17-1838	tobacco	.06
"	01-17-1838	1 plug tobacco	.07
"	01-18-1838	3 coffee .50 4 brown sugar	.94
"	01-24-1838	1 plug tobacco 2 coffee .50	.57

Table 5.C.1. Continued.

NAME	DATE	MERCHANDISE	COST
Hezekiah Roderick	12-09-1837	1 p. boots @ 3.25	3.25
"	12-13-1837	Amount Received of [Time]	3.50
"	12-15-1837	1 p. shoes 1.50 1 p. [?] @ .51	2.00
"	01-13-1837	1 p. shoes 1.37 1 comb @ .18 3/4	1.56
"	01-17-1837	2 candles @ .18 3/4 Muslin .12 1/2	.75
"	01-22-1838	1 skein silk	.06
"	01-23-1838	" .06 1/4	.06
"	01-31-1838	1/2 tobacco @ .31 1/4 2 oz tobacco .06 1/4	.22
"	02-10-1838	1 p. boots	3.50
"	02-12-1838	Merchandise P. Day Book	.41
"	02-13-1838	8 1/2 yas Calico @ .33 1/3	2.81
"	02-14-1838	1 soape .10 1 spool boss .06	.16
"	02-23-1838	Amount Received of [Sum]	9.03
"	02-24-1838	Merchandise P. Day Book	2.69
"	02-26-1838	"	3.58
"	02-27-1838	"	.54
"	03-12-1838	1 spool boss .06 1/4 1 oz cotton .10	.16
"	03-13-1838	6 yas cotton .16 1/3 12 yas Cam[???] .18 3/4 1/2 paste board	1.31
"	03-14-1838	1/2 [???] .12 1/2 2 oz tobacco @ .50	.13
"	03-16-1838	1/2 gallon vinegar	.16
"	03-17-1838	1 p. shoes 1.50 1/2 s[?]o[?] .12 1/2	1.56
"	03-21-1838	5 sugar @ .10 1/2 rosin soape @.10 1/4 tea .18 3/4	.74
"	03-24-1838	1/2 gallon molasses 1 candles .16 1/3	.48
"	03-27-1838	Merchandise P. Day Book	1.96
"	03-30-1838	5 mackerel @ .05	.25

Table 5.C.1. Continued.

NAME	DATE	MERCHANDISE	COST
Hezekiah Roderick	04-03-1838	1 doz mackerel @ .50 2 1/2 brown sugars @ .10	.75
"	04-05-1838	1/2 gallon molasses .31 8 1/2 yas Calico .18 3/4 1 paste board .06 1 candles .16 1/3	2.13
"	04-07-1838	1/2 yas Calico @ .18 3/4	.09
"	"	1/2 gallon molasses	.31
"	04-12-1838	2 1/2 brown sugar @ .10 1/4 tea .18 3/4	.44
"	04-13-1838	2 oz tobacco @ .50	.09
"	"	3 yas [pafier] @ .12 1/2 1/4 molasses .16	.53
"	"	For This Amount loaned	.50
"	04-17-1838	1 p. worsted stockings	.56
"	04-21-1838	1 p. shoes @ 1.25 4 brown sugar @ .09	1.61
"	04-26-1838	for amount received of [time]	13.00
"	04-28-1838	2 p. pumps 1.37 1 ya linen @ 1.00	3.75
"	"	8 1/2 yas Calico @ .25	2.13
"	04-30-1838	1/4 tea	.25
"	06-07-1838	1 1/2 rosin soape @ .10 1/2 1/2 st[???] @ .20	.25
"	06-09-1838	2 p. pumps @ 1.25	2.50
"	"	Amount Received	10.00
"	06-11-1838	Merchandise P. Day Book	3.61
"	06-11-1838	3 yas lined Muslin @ .20 [lin]ings @ .06	.65
"	06-16-1838	4 brown sugars @ .10 1/4 tea .25	.65
"	06-20-1838	Merchandise P. Day Book	.70
"	07-07-1838	4 brown sugar @ .10 1/4 tea @ .25	.65
"	07-12-1838	2 oz tobacco	.06
"	07-14-1838	Merchandise P. Day Book	1.04
"	"	Amount Received	5.00
"	07-18-1838	9 yas Calico .16 1/3	1.50

Table 5.C.1. Continued.

NAME	DATE	MERCHANDISE	COST
Hezekiah Roderick	07-31-1838	Merchandise P. Day Book	.50
"	08-01-1838	1 bottle mustard	.13
"	"	6 yas Cotton @ .16 1/3	1.00
"	08-02-1838	2 brown sugar @ .10	.20
"	08-03-1838	Merchandise P. Day Book	.27
"	08-04-1838	1/4 gallon vinegar	.08
"	08-06-1838	2 brown sugar @ .11	.22
"	08-07-1838	1/2 yd cotton @ .18 1/4 gallon Molasses .16 1 yas cotton @ .10 1/3 1 pafier needles 1 spool boss .06 1/4	1.35
"	08-18-1838	1 [lock] .13 6 brown sugar @ .11 2 coffee	1.12
"	"	40 yas brown Muslin @ .12	4.80
"	08-20-1838	1/2 candles 2 .20 2 soape @ .10	.30
"	08-21-1838	Merchandise P. Day Book	1.13
"	"	3 coffee @ .16	.33
"	08-23-1838	2 brown sugar @ .16 4 oz young tea	.34
"	09-06-1838	1/2 starch @ .20	.10
"	09-14-1838	Amount Received	10.00
"	09-27-1838	1/2 rosin soape	.08
"	12-15-1833	1 p. hose @ 1.00 1 comb .13	1.13
"	12-15-1833	2 Brown sugar .25 2 candles @ .14	.39
"	12-20-1838	2 5/8 yas Cassinett 1.50 2 sugar .25	4.56
"	12-26-1838	2 coffee	.33
"	12-2[illegible]-1838	2 yas Muslin @ .88 4 yas C[??mboic] & wadding	2.39
"	12-29-1838	3 sugar .25 2 coffee @ .34 whiskey .08	.67

Table 5.C.1. Continued.

NAME	DATE	MERCHANDISE	COST
Hezekiah Roderick	01-02-1838	4 brown sugar .44 1/4 ginger .06	.50
"	01-09-1838	1 p. shoes @ 1.13 tobacco & soap .16	1.29
"	01-12-1838	1 p. shoes @ 1.25 tobacco & thread	1.37
"	01-17-1838	3 coffee .50 4 brown sugar	.94

CHAPTER 6

WORKERS'S PRIVILEGE: METAL ITEMS FROM PARK BUILDING 48

Eric L. Larsen

INTRODUCTION

The metals found associated with Park Building 48 provide further details for the interpretation of an early nineteenth-century armory workers house. Metals from Harpers Ferry National Historical Park's archeological contexts are usually found in a poor state of preservation due to soil composition and/or the water table associated with the nearby rivers. The early contexts of this assemblage are no exception, but general identifications give additional information toward interpreting the building and its occupants.

Metals have found limited use in analysis of Harpers Ferry's sites because of difficulties inherent in identifying corroded materials and with the creation of a consistent methodology that would encompass the quantity and diversity of metal artifacts recovered. Ceramic and glass artifacts, the staples of historical archeology's analysis, have distinctive applications in material culture. Ceramics are used primarily in food production and serving, for containers, and for specific purposes such as tobacco pipes or household decoration. Glass is used predominately for containers such as bottles and jars, in tablewares used in food service, and for windows. Metals, however, show a variety of uses in architecture, machinery, tools, jewelry and clothing, coinage, etc. Metals are used for strength in supporting structures, for their ductility in conforming to specific shapes, and for their value or relative worth. Archeological analysis of metals require narrower functional groupings, i.e. militaria, architectural, and industrial.

The metal assemblage from Park Building 48, excavated during the 1990 field season, turned up several unique and recognizable metal artifacts. The presence of the two earliest nineteenth-century contexts provides an opportunity to use the metals in a limited analysis of the changing utilization of material culture by the armory workers residing in Park Building 48.

BACKGROUND HISTORY

The background history of Park Building 48 is far from definitive. Little is known of the building's initial construction as the earliest government acknowledgement of the building dates to after its construction. Armory expansion in the opening decades of the nineteenth century fostered overcrowding and unhealthy living conditions in Harpers Ferry. Since the government owned most of the land, and a monopoly existed on remaining private lands, workers were unable to buy or build homes. Lacking adequate funds for housing, Armory Superintendent James Stubblefield allowed workers to construct dwellings, at their own expense, on public lands. Between 1821 and 1832, domiciles ranging from modest frame houses to substantial stone and brick structures, had been erected in Harpers Ferry. Park Building 48 was one of these buildings. The government began compensating workers for construction and improvements of armory dwellings in the 1830s (Bumgardner 1991:10). These buildings were afterward retained as Armory housing.

Problems with Park Building 48's history continue. Numbers assigned to armory housing changed several times during the nineteenth century, causing confusion as to which building corresponds with the current structure. In addition, Armory rent records are incomplete and unavailable until the 1840s. The historic structures reports have each had difficulty locating the building on the available rent rolls, but the latest (Bumgardner 1991:13) limits possibilities to two armory dwellings.

Excavations completed over the summer and early fall of 1990, may provide some clues to help identify the possible residents of this particular armory dwelling. Examination of the building by architects and archaeologists suggest the building originally measured 19 feet by 15 feet, six inches. This corresponds with the smaller of two buildings constructed by William Smallwood listed by Superintendent Stubblefield as Armory Dwelling 32 (Bumgardner 1991:11,13). Archeology also suggests that the wing evident on the east side of Park Building 48 dates to the 1840s. This wing addition is perhaps suggestive of the duplex, or two family residence, first described in the 1844 rent rolls. Archeology has chosen to use this interpretation, but admits the other of Smallwood's buildings remains a viable possibility.

William Smallwood built the structure but there is no evidence as to whether or not he ever personally occupied the building. Smallwood, first recorded on the 1820 census as a breech filer, became a prominent citizen of the area. Later records show large land holdings (Bumgardner 1991:15) and involvement in local politics (*Virginia Free Press* [*VFP*] 5 July 1832:3; 7 March 1839:2; 13 May 1852:3). The earliest records of the building mention several outbuildings including a bake oven, smoke house, stable, and privy (Bumgardner 1991:11). Though its earliest occupants are unknown, it is likely that the structure served as housing for an armory worker.

The first residents appearing in the available rent rolls from 1841, were armorer Augustus Shope and his wife Catherine. They occupied the building until Augustus' death in 1844. Shope's connection with the armory is unclear but two recorded events tie him with Armory Superintendent Col. Edward Lucas. He participated in a dinner honoring Lucas and former Superintendent Gen. George Rust in 1837. Two years later, he served on a committee investigating charges that Lucas discharged seventy armorers because of affiliations with the Whig party (Bumgardner 1991:24). These incidents do not clarify Shope's relationship with the armory beyond implying deference in dealings with armory superintendents.

In December of 1844, Armory Dwelling 32 was listed as a duplex rented to two families: John Berlin and James O'Loughlin (Bumgardner 1991:22-3). John Berlin, born in Harpers Ferry in 1820, worked for the armory from June 1836, until its destruction in 1861. Berlin was initially listed as a "jobber" for the armory, but by 1844 payrolls listed him as "assistant jobbing smith." Rent roles record the Berlin's as living in the duplex through June 30, 1849. Less is known of James and Pleasant O'Loughlin, but rent rolls have them living in the building from 1844 to ca. 1846. Armorer William H. Wentzle and his family replaced the O'Loughlin's in the duplex until 1849 (Bumgardner 1991:26-29).

In 1849, the families of John Roderick and Armistead Ball moved into the dwelling. John Roderick's occupation is listed in the 1850 census as armorer. Little more is known of him other than his death in December of 1855 (Bumgardner 1991:30-1). Much more is known of Armistead Ball.

Ball appears to have worked his way up through the armory ranks. In 1849, the same year he moved into Armory Dwelling 32, Ball was promoted to the rank of Master Machinist (a title that, perhaps, reflects some status on the building he was living in). Ball was "considered one of the best machinists in the United States, [he] proved 'uncommonly clever' at designing self-acting machinery for drilling and rifling cast-steel gun barrels" (Smith 1977:248). Records have Ball purchasing another armory dwelling from the government sale in 1852. It is likely that he moved around this time. Ball was appointed Master Armorer in 1859, the same year that he was taken hostage in the John Brown raid (Bumgardner 1991:31-2).

The structures from this lot met a different fate than other armory dwellings. As armory officials found maintaining dwellings difficult, the buildings fell into disrepair and living conditions deteriorated. In 1851, the armory condemned and destroyed all housing deemed inadequate. The following year, the government sold most of the remaining dwellings. The houses were offered first at private sale to armory employees under the belief that land-owning workers would provide a more secure workforce (Snell 1959:83-9). Unlike other government-owned housing, the building now designated Park Building 48 was retained for armory use.

Because armory records were destroyed, it remains impossible to determine the residents of Park Building 48 from 1853 to 1861. Few records were kept during the Civil War, although Joseph Manuel occupied the house and used it as his dwelling and store. In 1869, the government sold off armory properties. Isabella and Benjamin F. Leisenring obtained possession of the property but little is known of its use. The next known owner was Gabriel L. Meyers, a local merchant who purchased the building in 1880 (Bumgardner 1991:32-7).

One year later Meyers sold the property to Margaret and Michael Dempsey. Michael died that same year (*Spirit of Jefferson* [*SoJ*] 8 November 1881:3), but Margaret retained residence in the building until 1886. Following the Dempsey occupation, the structure surely had several different residents, but little is known of specific occupants until the National Park Service obtained the building in 1953 (Bumgardner 1991:40-45).

DESCRIPTION OF CONTEXTS

Fifteen excavation units were placed around Park Building 48 (see Figure 6.1). Artifacts, ranging from the early nineteenth century to the present, were found throughout the different strata. Similar soil levels were combined across the site into seven distinct megastrata. To facilitate interpretation, the different megastrata were then combined into five contexts.

Context A (Megastratum I). Context A results from late twentieth-century activity around the building. This context was found across the entire site in all excavation units.

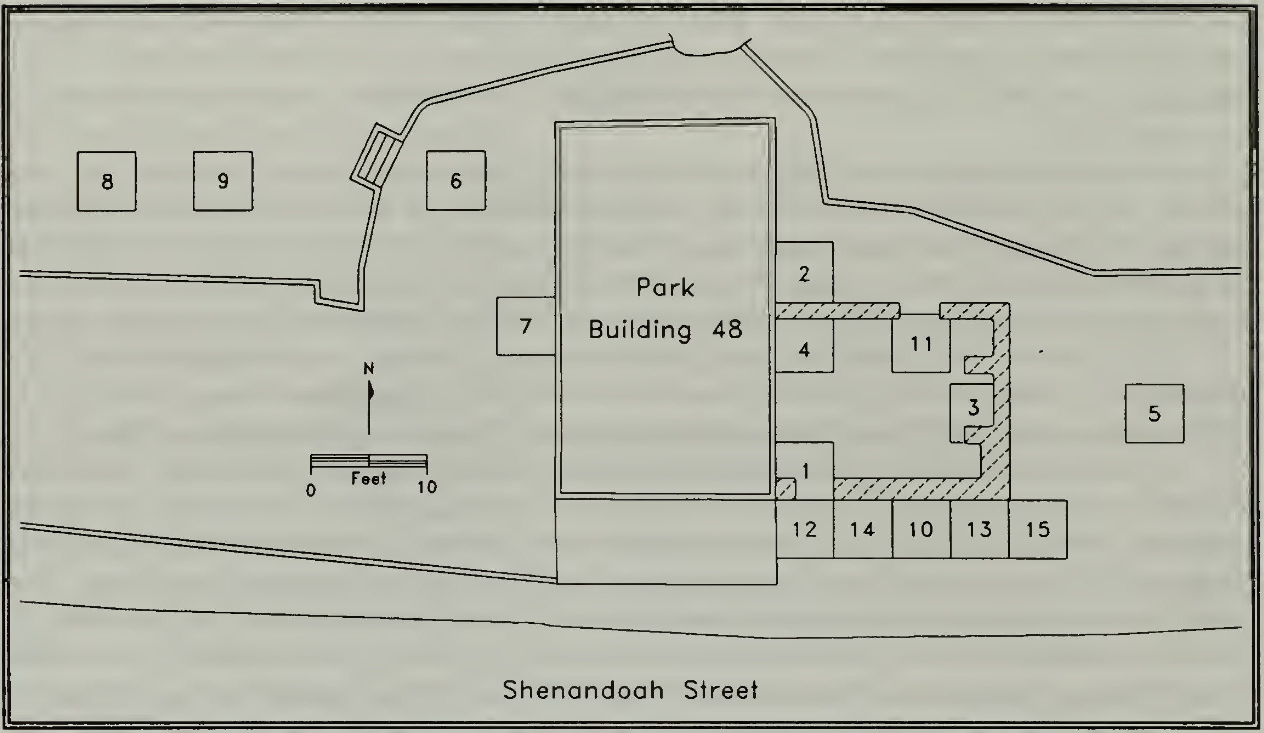

Figure 6.1. Map showing Park Building 48 with excavation units.

Context B (Megastratum II). Context B contained artifacts dating from the late nineteenth through early twentieth century. Context B was present in all excavation units except Excavation Units 8 and 9.

Context C (Megastratum III). Context C was associated with a terrace found on the west side of the building. This layer was the smallest of the five contexts being found only in Excavation Units 8 and 9 and dated to the mid to late nineteenth century.

Context D (Megastrata IV - V). All Excavation Units except 8 and 9 held materials from Context D. Artifacts from this context seem to correspond with occupation of the site from ca. 1841/44 to 1852. The early date seems to correspond with the addition constructed around 1841 and 1844.

Context E (Megastrata VI - VII). The oldest of the five contexts, Context E appears to correspond with the building's earliest occupation; (the building being constructed between 1821 and 1832 (Bumgardner 1991) until added wing was constructed (ca. 1841/1844).

Five contiguous excavation units were excavated in the area just north of Shenandoah Street and adjacent to the foundations of the 1840s wing (see Figure 6.1 -- Excavation Units 10, 12, 13, 14, and 15). This area provided the bulk of the artifacts recovered from Contexts D and E. Metal objects recovered from these early contexts were unusual in their distinction and thus required additional interpretation.

The majority of metals from Park Building 48 are nails and consists of 57.8% (n=3239) of all cataloged metals from the site (see Shackel and YoungRavenhorst this report). Use of nails in analysis creates numerous problems. Fragmentation, corrosion, and the high frequency of nails make their use difficult. The above numbers do not hold much significance beyond indicating a relative frequency of nail fragments compared to other metals.

Another 12.3% (n=690) of all cataloged metals were unidentified (see Shackel and YoungRavenhorst this report). The remaining 29.9% of the total assemblage can be divided into general functional groupings. Groupings used for the Park Building 48 assemblage include: Architectural, Arms, Clothing, Hardware, Personal, and Tools.

Context D

No distinctive architectural items were present in Context D (see Table 6.1). A mainspring from a gunlock was the only arms item (see Figure 6.2). Items identified as hardware include a bolt and washer, a copper alloy finial, a single harness related item, a spike, and a large ferrous washer. One personal item found was a metal tag with stamped letters that are now illegible from corrosion. Four tool items were found including parts of three different files (a file tang, a half-round file, and the tang from a triangular file), and one wedge.

Table 6.1. Functional groupings of distinctive metals from Context D (excluding nails and unidentified objects).

CONTEXT D	Arms	Lock, mainspring
	Hardware	Bolt and Washer
		Harness
		Spike
		Ferrule
		Washer
	Personal	Unidentified Tag
	Tool	File Tang
		File, Half Round
		File, Triangular, Tang
		Wedge

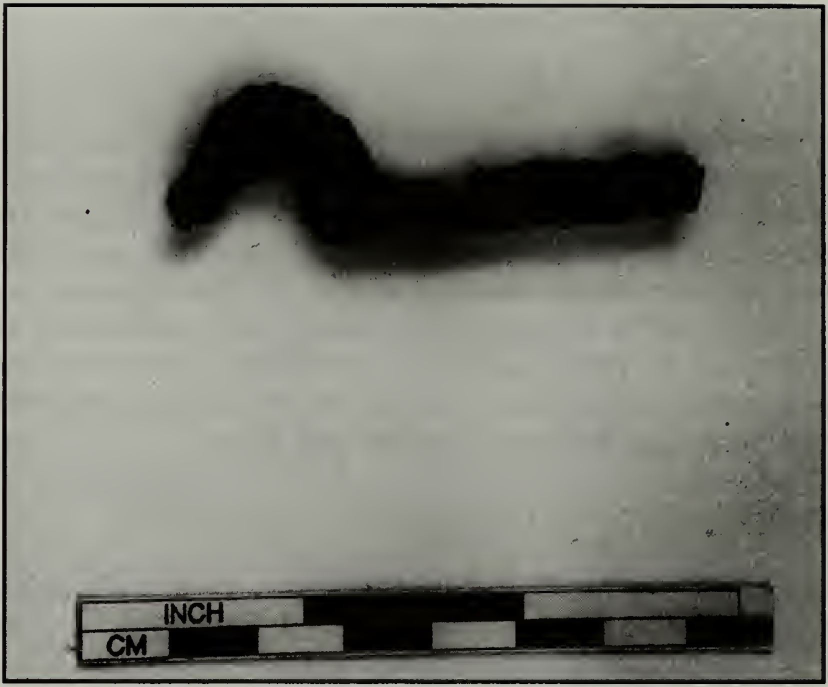

Figure 6.2. Mainspring for gun lock.

Context E

Two distinct architectural items were found -- a heavy strap from a large hinge, and a large staple probably associated with a door latch (see Table 6.2). Several distinguishable arms items were present from the five contiguous excavation units along Shenandoah Street (see Figure 6.3) including part of a .52 or .54 caliber gun barrel perhaps from a U.S. Rifle Model 1819, (see Brown 1968:65), a middle barrel band, a nearly complete socket bayonet likely from a U.S. Flintlock Musket Model 1816 (Reilly 1970:2-3), a gunlock which may be from a U.S. Flintlock Rifle Model 1819 (the lock plate measures nearly 6" and may be associated with this rifle model; see Brown 1968:65), two ramrods, and a side screw for securing the lock to the stock. A single clothing item was cataloged as a heel plate from a shoe. Items listed as hardware include a fireplace hook, two S-hooks, an L-headed spike, and a large wood screw perhaps for attaching the butt plate to a gun stock. A thimble was the only personal item found within this context. Several tool items, a wood chisel, three files of different types (one flat, one half round, and a triangular), a wedge, a single feather from a stone mason's tool kit, and a possible thumb latch or feather, were present in this context (see Figure 6.4).

Even with the distinctive metal assemblage available from Park Building 48, little is directly comparable. Two of the larger functional groups represented, however, show an interesting change. The amount of both arms and tool items diminish from Context E to D. Though explanations for this shift are unlimited, the larger context provides an explanation well worth consideration. Both the tools and arms can be related to Harpers Ferry's predominant antebellum industry and the manufacture of arms for the government of the United States. The contexts' dates correspond with changes in both the production of weapons and administration of the armory.

Table 6.2. Functional groupings of distinctive metals from Context E (excluding nails and unidentified objects).

CONTEXT E	Architectural	Hinge Strap
		Staple
	Arms	Barrel (.52-.54 caliber)
		Barrel Band, Middle
		Bayonet (Socket)
		Gunlock
		Ram Rods
		Ram Rod
		Side Screw
	Clothing	Heel Plate
	Hardware	Fireplace-Hook
		Hook
		S-Hook
		S-Hook
		Spike, L-Head
		Wood Screw
	Personal	Thimble
	Tool	Chisel, Wood
		File, Flat
		File, Half Round
		File, Triangular
		Masonry Feather
		Masonry Wedge
		Poss. Thumb Latch or Feather

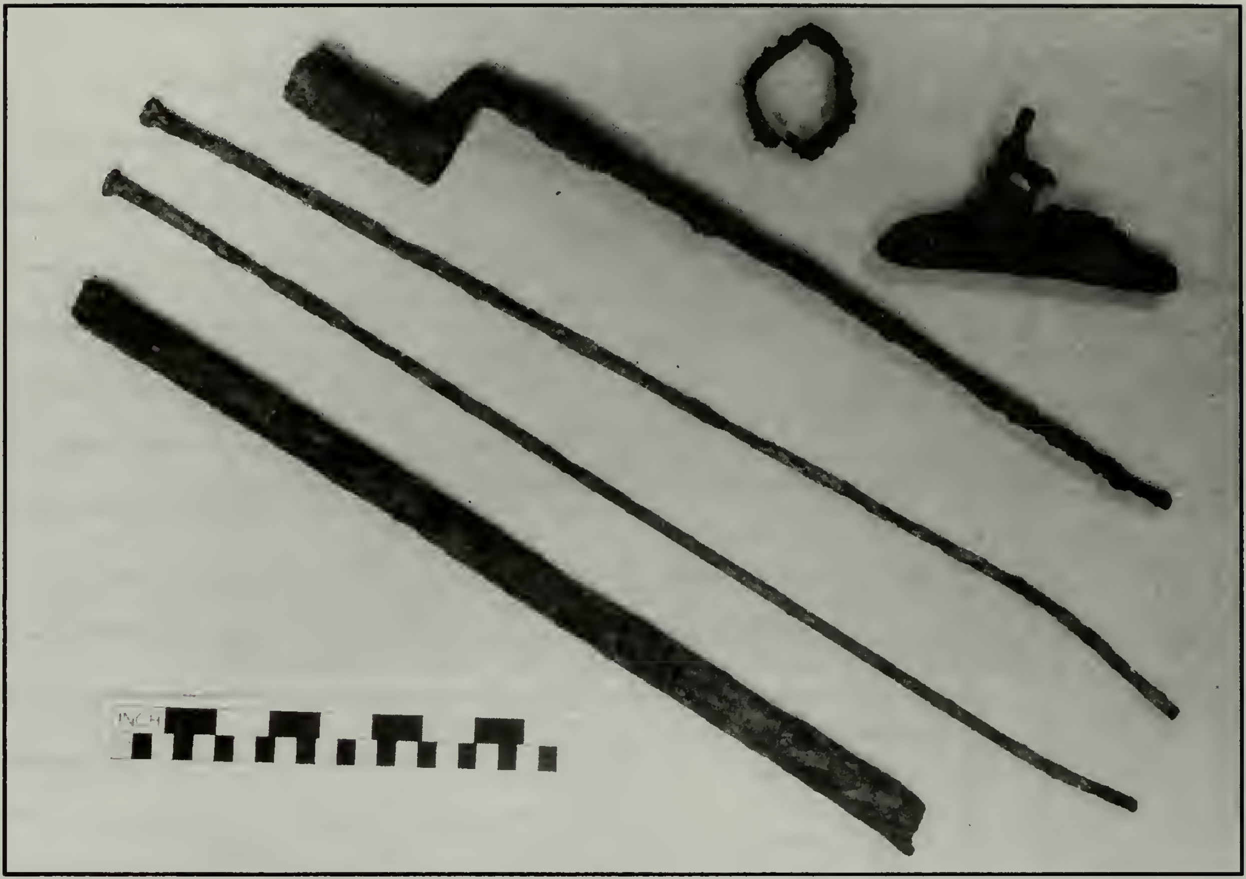

Figure 6.3. Arms items from Context E.

DISCUSSION

Historian Merritt Roe Smith (1977) produced a history of arms manufacture at Harpers Ferry. Smith, and others before him (see Barry 1984 [1903]:30-36), note the fundamental changes experienced within the armory during the 1840s. Administration during the armory's first decades has been characterized as overly reflective of local allegiances and too undisciplined (Smith 1977:266). Production costs were considerably higher at Harpers Ferry while the quality of arms was considered well below those from the Springfield Armory.

Production at Harpers Ferry was initially based upon a European craft tradition. Apprenticeships allowed one to work as a journeyman. With time and experience one could then become a master craftsman. The first weapon produced by the National Armories, the U.S. Model 1803, best represents this craft tradition (Smith 1977:56).

The next major production model, the U.S. Flintlock Musket Model 1816, was manufactured in the Harpers Ferry Armory until 1844 (Reilly 1970:3). To make production more efficient, management divided manufacture into four tasks, lock, mounting, stock, and barrel, but the craft tradition remained as workers were assigned tasks through their particular abilities.

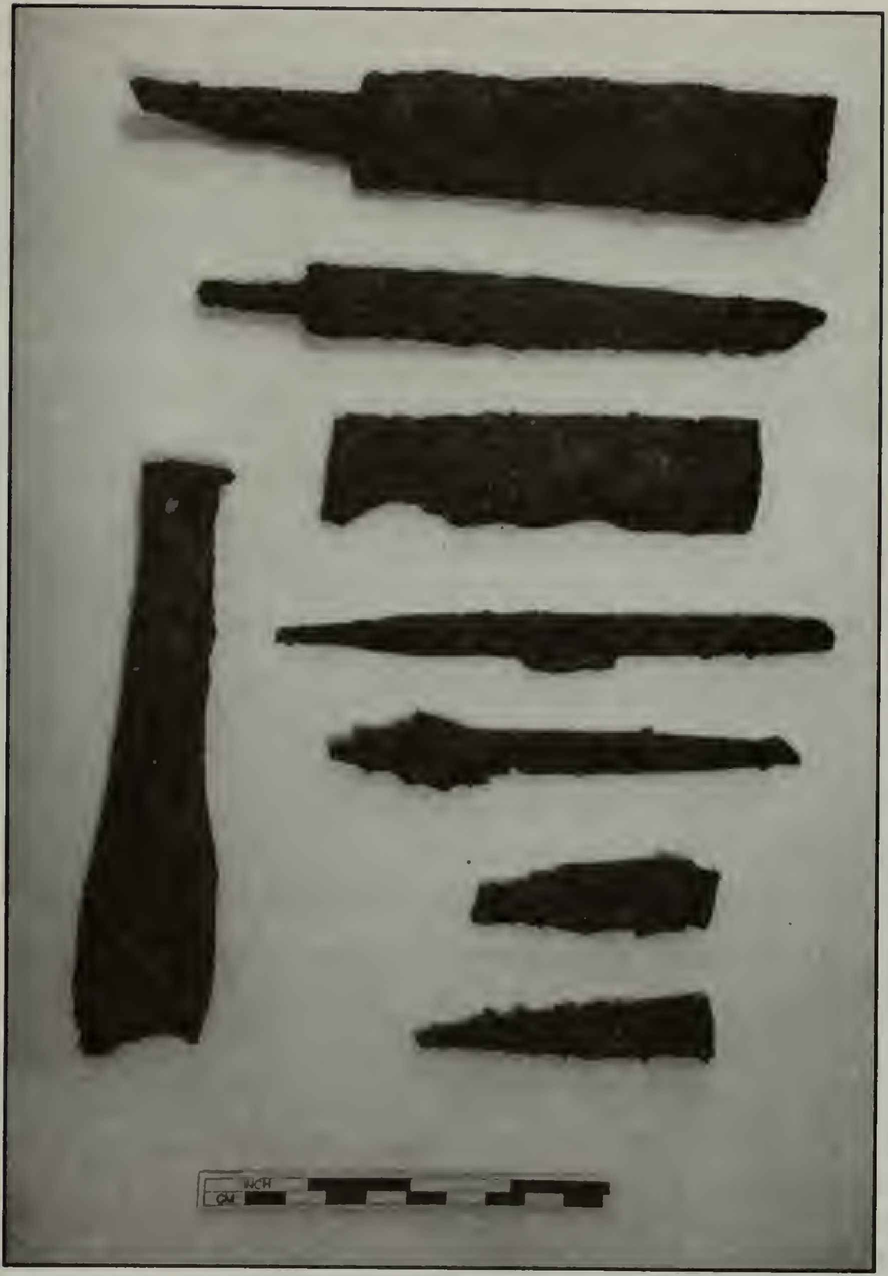

Figure 6.4. Chisel, files, and masonry tools from Context E.

Work in the armory was task oriented. Workers, paid by the piece, retained a feeling of individual freedom. As craftsmen, they were free to come and go at their convenience. Armory operations shut down on several occasions when workers, fearing the health conditions during the late summers, simply did not show up to work. This independence, however, involved more than just attendance.

Alcohol and gambling were frequent diversions for armory workers. Perceived as a necessity for heavy labor (Rorabaugh 1977:25), alcohol was integral to the workers at their jobs.

Joseph Barry recounts the recollections of armorers who could remember buckets of whiskey hung in the shops,

> from which it was their custom to regale themselves at short intervals. It is said, indeed, that this license was carried to such excess in the time of Mr. Stubblefield that an order was issued, prohibiting the men from drinking spirituous liquors in the shops -- a command which, at the time, was deemed arbitrary and which was evaded through the ingenious plan of the men's putting their heads outside of the windows, while they were taking their "nips" [Barry 1984 [1903]:30].

Dogfights, cockfights, fistfights, wrestling matches, and itinerant preachers were accepted diversions during the normal workday. Instead of curtailing these activities the early administrations ignored them or at times encouraged them as a means of raising worker morale (Smith 1977:66-67).

Outside observers blamed Harpers Ferry's higher production costs and lower output upon the local craft ideals. Attempts made to raise production through increased discipline and mechanization were met with resistance from the armory workers. The death of Thomas Dunn became a reminder of the workers feelings toward change. Superintendent Dunn entered his position in 1829, with the intent of instituting industrial discipline within the armory. In January 1830, Ebenezer Cox, disgruntled at his recent discharge from the armory, entered the Superintendent's office and shot Dunn at point blank range (Smith 1977:256). Dunn's fate became a reminder of workers' resistance to industrial reform. Little changed until the 1840s.

With the introduction of the military system in 1841, came many of the discipline reforms that increased arms production and began closing the gap that existed between Harpers Ferry and its counterpart in Springfield. Major Henry K. Craig was the first of the military superintendents. Under his management, hours of operation were set and a clock was installed to maintain the ten hour work day. In addition, Craig prohibited the consumption of alcohol during work hours and insisted that no unauthorized personnel be allowed into the workshops (Smith 1977:271). Over the next decade the water works and shop structures were improved and standardized to make them more efficient. Machinery was gradually introduced with the production of the U.S. Percussion Musket, Model 1842, in order to replace much of the handwork done in previous decades (Smith 1977:284).

Production and quality increased with the reorganization, but workers continued to show reluctance. Workers complained, Dunn's name was brought up, a general strike was held (the "clock strike" see Smith 1977:272), and eventually the superintendency was returned to civilian control. The changes, however, were lasting and the new industrial system continued.

The files and gunparts found in the earlier Context E seem to correspond to the earlier and more labor intensive craft ethos. The various weapons parts were found in a concentrated area adjacent to Shenandoah Street. Though only a small percentage of the assemblage, when compared to other sites in Harpers Ferry, the concentration of weapons parts found is significant. The various files (flat, round, and triangular) found along with the weapon parts may be associated with weapons manufacture. These gun parts and tools are likely the result of armory workers taking items home.

Context D held fewer arms and tool items though again, three files were represented (a definite half round, a triangular file, and a tang from another file were present within this context). Since Context D can be associated with the period of armory changes, the lack of gunparts may be the result of increased discipline at the armory. The new regulations would have made working and having materials at home more difficult. The continued presence of the files, however, may evidence the continued use of armory tools. Smith (1977:270) tells that the illegal resale of government tools was a frequent practice among the workers and may have continued after the armory changes as an act of resistance.

Other metal items from these contexts, items such as fireplace hooks, hinge straps, thimbles, heel plates, or harness hardware, are not as closely tied to the town's industry. These items, being more a part of domestic life, are not as likely to directly reflect the armory changes.

Other unique tool items include the masonry feather and wedge found in Context E. These are probably the result of the abundant stonework done throughout the town of Harpers Ferry. Whether carving out new space in the shale cliffs or finishing stone for use as building material, masonry was a recurrent practice around Harpers Ferry. A stone mason from this period is known. Armory records from 1830 show money owed to one John Gust, a free African-American, for work done. Several slaves are listed as residing with Gust perhaps suggesting that he ran a crew of masons (African-American History Database 1992).

It is interesting that these masonry tools were found within Context E and not in the above Context D. Containing strata which consisted of about 80% shale, Context D has been interpreted as a construction phase associated with the addition of the wing to the building. Masonry tools would be consistent with this interpretation. The regularity and extent of stonework done in Harpers Ferry, however, makes these tools appropriate to any period of town growth or repair.

Although the assemblage is relatively small, the metals from Park Building 48 do lend some insight into the armory workers' lives in the early nineteenth century. Industrialization's effect on the armory's production and administration are visible in the archeological record. The change from craft traditions to mechanized efficiency is even apparent in the workers' homes.

CHAPTER 7

ARMORY WORKERS' DOMESTIC FAUNAL ASSEMBLAGES

Brett J. Burk

INTRODUCTION

This chapter examines armory workers' household faunal assemblages during the inception of the industrial revolution at the Harpers Ferry National Armory. During this era the government began to regulate work practices and renovate buildings to a uniform architectural style. The workers had to deal with increased regimentation and standardization as the armory became increasingly dependant on industrial work practices and machinery. Concurrently, the canal and railroad arrived in Harpers Ferry. The local markets expanded dramatically as the town became a collection point for local farm produce to be shipped east while it received goods from eastern cities such as Alexandria, Washington and Baltimore. Social, economic and political changes occurred both nationally and locally and dramatically affected the diet of early industrial workers and their families.

HISTORICAL BACKGROUND

Faunal remains can provide information about the relative dietary importance of species and butchering techniques and "[o]nly when combined with data from documentary sources can social, economic, and cultural patterns become visible" (Bowen 1990). In an effort to place faunal data in an historical context, this section explores the state of Harpers Ferry and the nation in the early nineteenth century and some of the social, economic, and political changes that occurred after 1830.

The period is characterized by rapid expansion of transportation networks, the strengthening of industrial capitalism, and the beginning of the rapid communication era. Increasing pressures for efficient transportation from the early industrial centers helped to accelerate the building of canals and railroads, both of which reached Harpers Ferry in the 1830s.

"The linking of the nation's rail system and the development of refrigeration revolutionized the marketing of food products" (Henn 1985). The extension of the railroads made it possible for cities to draw on surrounding areas for food products (Henn 1985; Martin 1942). Food production began to move from the household to specialized production centers. From these centers, the food was transported to the expanding markets by way of the rapidly growing transportation system. "This whole development of manufacturing for market sale, which took place between 1815 and 1860, was, like most important economic changes, neither orderly nor systematic" (Taylor 1977).

Coinciding with these transportation changes there was an increase in industrial activity. These changes are inseparable in that, to a large degree, each made the other possible. The canals and railroads provided an outlet for the centers of production, while industrial centers supported the transportation infrastructure helping stimulate further expansion.

An historical examination of Harpers Ferry shows that industrial transportation networks greatly impacted the town. By 1834 both the Chesapeake and Ohio Canal and the Baltimore and Ohio Railroad had reached Harpers Ferry. Harpers Ferry increasingly received daily shipments of goods and was visited by people from Washington City, Baltimore, and Alexandria. At the same time Harpers Ferry received an increasing amount of goods from the east and served as a collection point for country produce to be sold to eastern markets (see *Virginia Free Press [VFP]*, 9 October 1845:3). Thus transportation developments directly affected the town's market structure.

The local period newspapers contained advertisements for foodstuffs shipped from the eastern markets, as well as requests for country produce. Also evident from newspaper articles is the awareness that the railroad and canal would strongly affect the town's business (see *VFP*, 27 March 1834:3).

The creation of an industrial infrastructure allowed for dramatic and critical changes in both the social and economic structure of the work and domestic spheres of the town. Before the 1830s, armorers considered themselves as craftsmen artisans. There were no set work hours to follow, and the armory moved to the rhythms of an agrarian society. During the 1830s and early 1840s, management shifted toward a factory discipline. Mechanization increased, which facilitated the drive towards interchangeable parts and the standardization of firearm production. The installation of a clock on armory grounds in 1841 is one of the more important symbols of the era: "its [the time clock's] ineluctable cadence served to emphasize the rigorous discipline, regularity, and specialization so often associated with the coming of the machine. In this sense, the clock not only kept time but symbolically deprived armorers of the satisfaction of traditional craft labor" (Smith 1977: 271). An examination of the archeological record on the household level can illuminate how industrial standards and rhythms affected the everyday lives of factory workers. "A major component of studying nineteenth-century urban foodways, therefore, lies in evaluating and understanding the pattern of a particular household's interaction with and participation in urban market systems" (Landon 1987: 138).

Site Background

In the early nineteenth century, the government could not satisfy the demands for housing at Harpers Ferry. The exact date for Park Building 48 construction is unknown, although it was likely erected between 1821 and 1832 (Bumgardner 1991: 10). Some references indicate that the original builder was William Smallwood, although it is not evident whether he ever resided in this building. By 1832 Smallwood had purchased a large tract of land in Bolivar, and was noted by the *Virginia Free Press* (*VFP* 30 August 1832, 11 October 1838) as "Mr. Smallwood of Bolivar...". It is probable that if Smallwood ever lived in Park Building 48 it was for a short period.

During the 1840s, several families occupied the structure. The house was rented in 1841 by Augustus Shope and family. Shope's ties to the armory are unknown, although it appears that he did have some interaction with the facility. Shope died in 1844. The government added the east wing and then rented the building to two families: John Berlin and James Y. O'Laughlin and their families were listed in the rent rolls as the occupants (Bumgardner 1991).

The John Berlin household resided in Park Building 48 from 1844 through June 1849. Berlin was an assistant jobbing smith at the armory. James O'Laughlin and family were renting the dwelling with John Berlin at the end of 1844. O'Laughlin was an armorer by profession (Bumgardner 1991).

The 1846 rent rolls indicate that the O'Laughlins were no longer residing in Park Building 48, since William H. Wentzle and John Berlin were the two rent-paying residents. Wentzle, an armorer like the others, was also a temperance movement activist. He had moved to Bolivar by 1850 (Bumgardner 1991).

After 1850, the residents of the dwelling were A. M. Ball and J. W. Roderick. Both of these men were employed by the armory and Ball would eventually become the Master Armorer of the facility. It is impossible to determine the residents of Park Building 48 between 1853 and 1869 due to the destruction of pertinent National Archive records (Bumgardner 1991).

In summary, the pre-1841 occupants are unknown, although household members likely worked in the armory. From the early 1840s through 1853, the occupants are all tied to the armory.

DATA

The osteological material recovered was identified using a comparative collection established through comparisons of faunal material with the Colonial Williamsburg zooarchaeological type collection. Some additional identifications were made using the Smithsonian Institution's type collection housed in the National Museum of Natural History. Finally, several texts designed to aid in osteological identification were consulted (Cannon 1987; Gilbert 1980, 1985; Schmid 1972; Sisson and Grossman 1960).

The data for the Park Building 48 excavations are divided into five temporal assemblages (A-E). The designation of megastrata used in this study was accomplished through the analysis and dating of non-faunal artifacts. Context A (Megastratum I) dates to the late twentieth century, Context B (Megastratum II) dates to the late nineteenth and early twentieth centuries, Context D (Megastratum IV - V) dates from 1841 to 1853, and Context E (Megastratum VI - VII) dates from 1820s to 1841 (no faunal assemblage exists for Context C). The data for all four of the assemblages are presented in this chapter, however, only Contexts D and E are compared and contrasted. The pre-1841 residency is associated with Context E, and the multiple armorer family occupancy of 1841 through 1853 is associated with Context D (see Shackel and YoungRavenhorst, this report).

Traditionally, the minimum acceptable number for performing many faunal studies, to avoid biases based on sample size, has been set at 1400 bones or 200 individuals (Reitz 1983). While all of the assemblages from this site contain less bones than the above recommendation, the collections are still useful to indicate trends. The subject of relative dietary importance is generally examined through two calculations, biomass and the total useable meat weight percentage (based on Minimal Number of Individuals [MNI]). While both measures are useful, their strengths make them appropriate for different kinds of analyses.

MNI, and measures derived from it (e.g. total meat weight) are most useful in situations where entire animals were consumed or were likely present on the site. MNI calculations are widely used by zooarchaeologists and are therefore a useful intersite comparative tool.

Biomass is another measure increasingly used by zooarchaeologists and is also an effective comparative tool. Since biomass figures are calculated for both identified and unidentified bones, these figures often reflect a better relative picture of the composition of the entire assemblage than do MNI-based calculations. Minimum Number of Individual calculations, including total meat weight, and biomass percentages will be used throughout this chapter as the primary indicators of the relative dietary importance of species.

Context A (Megastratum I)

The Context A assemblage, which dates to the mid-twentieth century, contains only 223 bones belonging to fourteen taxonomic groups: one fish, three bird, and ten mammals. Table 7.1 shows the taxa identified as well as the number and weight of each. A brief summary of the species follows.

Piscine Remains. The only fish taxon identified is bony fish (Class Osteichthyes). None of the three fragments, which have an average weight of only 0.1 grams and are all scales, are identified beyond the Class level.

Avian Remains. Two avian taxa are identified, chicken (*Gallus gallus*) and bird (Class Aves). The three chicken bones could represent either market purchases of meat or chickens raised on the site. If the bones are the result of the latter situation, they may represent not only the nutritional contributions of the meat, but also the eggs.

Wild Mammals. Only one wild mammal species was recovered from the mid-twentieth-century assemblage; old world rat (Rattus spp.). The presence of this taxon is generally explained as commensal rather than food remains.

Domestic Mammals. The three main food domesticates of pig (*Sus scrofa*), cow (*Bos taurus*), and sheep/goat (*Ovis aries/Capra hircus*) are all represented in Context A. In addition, a single cat bone (a *Felis domesticus* left tibia) falls into the domestic mammal category as a commensal species.

A significant number of animal bones were not identifiable to the species level. In addition, several of these were not identifiable to even a size category. These are referred to simply as mammal (Class Mammalia). There are four other non-species mammal taxa in this assemblage: large mammal (Class Mammalia I), medium mammal (Class Mammalia II), small mammal (Class Mammalia III) and sheep/goat,deer or pig (Order Artiodactyla I).

The large mammal bones (n=27) are most likely cow since this was the only large mammal species identified in the assemblage. With the exception of two long bone diaphyses (shafts) and one innominate (pelvis) fragment, all of the large mammal bones are either

Table 7.1. Identified taxa for Context A, including the number, weight, and average weight of the bones.

Taxon	No.	Weight	Avg. Wt.
Bony Fish	3	0.2	0.1
Bird	28	19.7	0.7
Bird/Small Mammal	1	0.3	0.3
Chicken	1	2.4	2.4
cf. Chicken	2	1.8	0.9
Mammal	122	341.0	2.8
Large Mammal	27	371.2	13.7
Medium Mammal	13	126.0	9.7
Small Mammal	3	5.0	1.7
Old World Rat	8	3.0	0.4
cf. Domestic Cat	1	4.8	4.8
Sheep, Goat, Deer, or Pig	2	50.6	25.3
Domestic Pig	5	56.8	11.4
cf. Domestic Pig	1	37.2	37.2
Domestic Cow	2	80.3	40.2
cf. Domestic Cow	3	89.7	29.9
cf. Domestic Sheep or Goat	1	27.8	27.8
Total Identified	26	354.4	13.6
Total Unidentified	197	863.4	4.4
Total	223	1217.8	5.5

Note: The "No." column is the number of bone fragments, the "Weight" is in grams, and "cf." designates uncertain identifications.

unidentifiable elements or vertebra and rib fragments. Over 74% (n=20) of these bones exhibit butchering evidence such as saw marks.

The primary animals that fall under the medium mammal category (n=13) are pig, deer, and sheep/goat, although any mammal of comparable size could be included. As with the large mammal bones, there is butchering evidence. Fifty-four percent (n=7) display marks attributed to butchering, four of which are saw marks and three are knife marks.

Small mammals include those of lesser physical stature than sheep. Three bones are identified to this taxon, a humerus (forelimb element), a metatarsal (hindfoot element), and one unidentified element.

Relative Dietary Importance and Modifications. Cow is the most important species by both measures, with cow:pig:sheep ratios of 6:3:1 for biomass and 11:6:1 for total meat weight figures (Table 7.2). The higher percentage values for the identified species in the total meat weight category relative to the biomass percentages is a product of the method in which these measures are calculated. The former is based on a calculation of MNI, which is performed only on the bones identified to species. The latter is calculated for all of the bones of the assemblage.

Context B (Megastratum II)

This assemblage, while larger than Context A, is still fairly small (n=311). This late nineteenth-to early twentieth-century faunal assemblage has fourteen identified taxa: two fish, three bird, and nine mammal. Table 7.3 illustrates the identified taxa as well as the number and weight of each. A brief summary of the identified species follows.

Piscine Remains. One herring (Family Clupeidae) bone is the only fish element identified by species. There are, however, four additional fish bones from the bony fish taxa (Class Osteichthyes) in the assemblage.

Avian Remains. Only one species of bird is fully identified, chicken (*Gallus gallus*). The ten identified chicken bones consist of several different elements (Appendix 7.A; Table 7.A.1). In addition to the chicken taxa, a grouse, partridge, or pheasant (Family Phasianidae) may be represented. However, the bones comprising this group may very well be turkey or chicken, as these two species are also in the Phasianidae family. Thirty-seven avian fragments are identified only to the bird (Class Aves) level. While many of these could be identified to element, none could be identified to species.

Wild Mammals. Two wild mammals, eastern gray squirrel (*Sciurius carolinensis*) and old world rat (Rattus spp.), are identified. The three squirrel bones may represent either food refuse or a commensal species. The rat bones (n=19) are most likely a commensal species and may help account for the numerous gnaw marks on the osteological material throughout the assemblages.

Domestic Mammals. The three domesticates identified are: cat (*Felis domesticus*), pig (*Sus scrofa*), and cow (*Bos taurus*). The two of these (pig and cow) each have higher biomass values than any other species. Combined, their biomass is 25% of the entire assemblage (cow=18.9% and pig=6.1%).

The remaining mammal bones are identified to mammal (Class Mammalia), large mammal (Class Mammalia I), medium mammal (Class Mammalia II), and small mammal (Class Mammalia III). The mammal taxon has 136 bones, only six of which are identified by element (two vertebrae and four long bones). The large mammal bones (n=28) comprise the largest taxon by weight and biomass (biomass = 37%). Fifty-seven percent (n=16) of the large mammal bones exhibit evidence of butchering.

Table 7.2. Summary table for Context A.

Taxon	No.	Pct.	MNI	Pct.	Total Meat Weight (lbs)	Meat Wt. (lbs)	Pct.	Weight (gms)	Pct.	Biomass (kgs)	Pct.
Class Osteichthyes (Bony fish)	3	1.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	0.2	0.0	0.00	0.0
Class Aves (Bird)	28	12.6	0/ 0	0.0	0.0/ 0.0	0.0	0.0	19.7	1.6	0.08	1.8
Class Aves/Mammalia III (Bird/mammal)	1	0.4	0/ 0	0.0	0.0/ 0.0	0.0	0.0	0.3	0.0	0.00	0.0
Gallus gallus (Chicken)	1	0.4	1/ 1	22.2	2.5/ 1.0	3.5	0.5	2.4	0.2	0.01	0.3
cf. Gallus gallus	2	0.9	0/ 0	0.0	0.0/ 0.0	0.0	0.0	1.8	0.1	0.01	0.2
Class Mammalia (Mammal)	122	54.7	0/ 0	0.0	0.0/ 0.0	0.0	0.0	341.0	28.0	1.16	26.1
Class Mammalia I (Large Mammal)	27	12.1	0/ 0	0.0	0.0/ 0.0	0.0	0.0	371.2	30.5	1.26	28.2
Class Mammalia II (Med. Mammal)	13	5.8	0/ 0	0.0	0.0/ 0.0	0.0	0.0	126.0	10.3	0.48	10.7
Class Mammalia III (Sm. Mammal)	3	1.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	5.0	0.4	0.03	0.6
Rattus spp. (Old World Rat)	8	3.6	2/ 0	22.2	0.0/ 0.0	0.0	0.0	3.0	0.2	0.02	0.4
cf. Felis domesticus (Dom. Cat)	1	0.4	1/ 0	11.1	0.0/ 0.0	0.0	0.0	4.8	0.4	0.03	0.6
Order Artiodactyla I	2	0.9	0/ 0	0.0	0.0/ 0.0	0.0	0.0	50.6	4.2	0.21	4.7
Sus scrofa (Domestic Pig)	5	2.2	2/ 0	22.2	100.0/ 50.0	200.0	31.3	56.8	4.7	0.23	5.2
cf. Sus scrofa	1	0.4	0/ 0	0.0	0.0/ 0.0	0.0	0.0	37.2	3.1	0.16	3.5
Bos taurus (Domestic Cow)	2	0.9	1/ 0	11.1	400.0/ 50.0	400.0	62.6	80.3	6.6	0.32	7.1
cf. Bos taurus	3	1.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	89.7	7.4	0.35	7.9
cf. Ovis aries/Capra hircus (Sheep/Goat)	1	0.4	1/ 0	11.1	35.0/ 15.0	35.0	5.5	_27.8	2.3	0.12	2.7
TOTALS	223	100.0	9	100.0	-.-/-.-	638.5	100.0	1217.8	100.0	4.45	100.0

The "No." column refers to the number of bones identified to that taxon. The MNI column refers to the Minimum Number of Individuals. The number before the slash is the number of adults and the number of immature specimens follows the slash. The slash separates the adult/immature animals in the Meat Weight column as well. The Meat Weight column is the meat weight of the entire animal. The "Total Meat Weight" column is derived by multiplying the MNI by the Meat Weight and then adding the two sides of the slash together. The "Weight" column is the weight of the actual archeological bones.

Table 7.3. Identified taxa for Context B, including the number, weight, and average weight of the bones.

Taxon	No.	Weight	Avg. Wt.
Bony Fish	4	0.4	0.1
cf. Herring	1	0.1	0.1
Bird	37	34.2	0.9
Grouse, Partridge, or Pheasant	2	5.4	2.7
cf. Grouse, Partridge, or Pheasant	1	3.9	3.9
Chicken	3	13.0	4.3
cf. Chicken	7	12.6	1.8
Mammal	136	214.3	1.6
Large Mammal	28	557.1	19.9
Medium Mammal	39	174.1	4.5
Small Mammal	15	5.1	0.3
cf. Eastern Gray Squirrel	3	6.4	2.1
Old World Rat	19	6.5	0.3
cf. Domestic Cat	1	2.4	2.4
Domestic Pig	6	46.0	7.7
cf. Domestic Pig	2	22.8	11.4
Domestic Cow	3	114.0	38.0
cf. Domestic Cow	4	126.4	31.6
Total Identified	52	359.5	6.9
Total Unidentified	259	985.2	3.8
Total	311	1344.7	4.3

Note: The "No." column is the number of bone fragments, the "Weight" is in grams, and "cf." designates uncertain identifications.

Thirty-nine medium mammal fragments are identified in Context B. Butchering evidence is identified on 33% of the medium mammal fragments. The 15 small mammal bones could represent any mammals smaller than sheep, but the majority are most likely rodents.

Relative Dietary Importance and Modifications. The biomass percentages indicate that the most important species was probably cow, with a biomass value of 18.9% (Table 7.4). The pig has the second highest biomass value, 6.1%. The only other domesticate, chicken, has a biomass value of 2.2%. It appears that the vast majority of the consumed meat was from the domesticates. The only wild food species identified is squirrel, and it may be the result of natural death and decomposition. The butchering evidence from the pig and cow bones is different. While no such evidence is noted for the pigs, 57% (n=4) of the cow bones have been butchered, primarily with a saw.

Context C

No faunal assemblage exists for Context C.

Context D (Megastrata IV and V)

Context D dates from 1841 through 1853, and is associated with the multiple family armory worker occupation previously described. There are 20 identified taxa: two fish, three bird, and fifteen mammal (Table 7.5). The assemblage is considerably larger than Contexts A and B, and contains 660 bones. A brief species summary follows.

Piscine Remains. The single sucker (Family Catostomidae) bone is the only fish bone identified beyond the category of bony fish (Class Osteichthyes). Sucker fishes are common in the riverine environment surrounding Harpers Ferry and this bone most likely represents exploitation of local fauna for food. The small number of fish bones may be partially due to their low resistance to taphonomic stresses (Colley 1990; Limp 1979; Parmalee 1985; Reitz 1986).

Avian Remains. Chicken (*Gallus gallus*) and turkey (*Meleagris gallopavo*) are both present in the Context D assemblage. The chicken may represent either a purchase at market, or domestic keeping of chickens, which require little room and provides both eggs and meat. The turkey bones offer three possibilities as to their origin. They could have come from a market, could have been kept domestically or they could indicate utilization of wild fauna since wild turkeys (also called *Meleagris gallopavo*) did, and still do, inhabit the woods around Harpers Ferry. Wild and domestic turkeys are impossible to differentiate osteologically, partially because, "it is doubtful if more than a small number of the wild birds east of the Mississippi are without a degree of admixture with the domestic form" (Schorger 1966).

The remaining avian bones are assigned to two larger taxa: bird (Class Aves), and grouse, partridge or pheasant (Family Phasianidae). While some of these fragments could be identified to element, they could not be identified to the species level.

Wild Mammals. Ten bones are classed into this taxon, one eastern cottontail (*Sylvilagus floridanus*), one rodent (Order Rodentia), and eight old world rat (Rattus spp.). The cottontail bone may represent a wild species used for food. It may also be evidence of natural death. The rodent and old world rat bones are probably commensal species.

Domestic Mammals. The domestic triad, consisting of pig (*Sus scrofa*), cow (*Bos taurus*), and sheep/goat (*Ovis aries/Capra hircus*), is well represented in the Context D assemblage. Combined, these animals account for 25.4% of the biomass of the entire assemblage. Of these three species, the pig bones are the most numerous (n=48) (Table 7.A.2).

Table 7.4. Summary table for Context B.

Taxon	No.	Pct.	MNI	Pct.	Meat Weight (lbs)	Total Meat Wt. (lbs)	Pct.	Weight (gms)	Pct.	Biomass (kgs)	Pct.
Class Osteichthyes (Bony Fish)	4	1.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	0.4	0.0	0.00	0.1
cf. Family Clupeidae (Herring)	1	0.3	1/ 0	9.1	0.0/ 0.0	0.0	0.0	0.1	0.0	0.00	0.0
Class Aves (Bird)	37	11.9	0/ 0	0.0	0.0/ 0.0	0.0	0.0	34.2	2.5	0.13	2.7
Family Phasianidae	2	0.6	0/ 0	0.0	0.0/ 0.0	0.0	0.0	5.4	0.4	0.02	0.5
cf. Family Phasianidae	1	0.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	3.9	0.3	0.02	0.4
Gallus gallus (Chicken)	3	1.0	1/ 0	9.1	2.5/ 1.0	2.5	0.5	13.0	1.0	0.05	1.1
cf. Gallus gallus	7	2.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	12.6	0.9	0.05	1.1
Class Mammalia (Mammal)	136	43.7	0/ 0	0.0	0.0/ 0.0	0.0	0.0	214.3	15.9	0.77	15.9
Class Mammalia I (Large Mammal)	28	9.0	0/ 0	0.0	0.0/ 0.0	0.0	0.0	557.1	41.4	1.81	37.7
Class Mammalia II (Med. Mammal)	39	12.5	0/ 0	0.0	0.0/ 0.0	0.0	0.0	174.1	12.9	0.64	13.2
Class Mammalia III (Sm. Mammal)	15	4.8	0/ 0	0.0	0.0/ 0.0	0.0	0.0	5.1	0.4	0.03	0.5
cf. Sciurus carolinensis (Squirrel)	3	1.0	1/ 0	9.1	1.0/ 1.0	1.0	0.2	6.4	0.5	0.03	0.7
Rattus spp. (Old World Rat)	19	6.1	4/ 0	36.4	0.0/ 0.0	0.0	0.0	6.5	0.5	0.03	0.7
cf. Felis domesticus (Dom. Cat)	1	0.3	1/ 0	9.1	0.0/ 0.0	0.0	0.0	2.4	0.2	0.01	0.3
Sus scrofa (Domestic Pig)	6	1.9	1/ 0	9.1	100.0/ 50.0	100.0	18.1	46.0	3.4	0.19	4.0
cf. Sus scrofa	2	0.6	0/ 0	0.0	0.0/ 0.0	0.0	0.0	22.8	1.7	0.10	2.1
Bos taurus (Domestic Cow)	3	1.0	1/ 1	18.2	400.0/ 50.0	450.0	81.3	114.0	8.5	0.43	9.0
cf. Bos taurus	4	1.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	126.4	9.4	0.48	9.9
TOTALS	311	100.0	11	100.0	--.-/-.--	553.5	100.0	1344.7	100.0	4.81	100.0

The "No." column refers to the number of bones identified to that taxon. The MNI column refers to the Minimum Number of Individuals. The number before the slash is the number of adults and the number of immature specimens follows the slash. The slash separates the adult/immature animals in the Meat Weight column as well. The Meat Weight column is the meat weight of the entire animal. The "Total Meat Weight" column is derived by multiplying the MNI by the Meat Weight and then adding the two sides of the slash together. The "Weight" column is the weight of the actual archeological bones.

Table 7.5. Identified taxa for Context D, including the number, weight, and average weight of the bones.

Taxon	No.	Weight	Avg. Wt.
Bony Fish	2	0.2	0.1
Sucker	1	0.2	0.2
Bird	74	62.4	0.8
Grouse, Partridge, or Pheasant	3	1.5	0.5
Turkey	2	9.7	4.9
cf. Turkey	1	1.4	1.4
Chicken	5	6.9	1.4
Mammal	341	573.1	1.7
Large Mammal	46	723.0	15.7
Medium Mammal	74	414.7	5.6
Small Mammal	33	36.8	1.1
Eastern Cottontail	1	0.9	0.9
Rodent	1	0.2	0.2
Old World Rat	8	2.6	0.3
cf. Cat	1	2.8	2.8
cf. Domestic Cat	2	8.9	4.5
Sheep, Goat, Deer, or Pig	2	21.1	10.6
Sheep, Goat, or Deer	1	8.4	8.4
Domestic Pig	43	257.4	6.0
cf. Domestic Pig	5	40.1	8.0
Domestic Cow	5	153.8	30.8
cf. Domestic Cow	3	87.8	29.3
Domestic Sheep or Goat	6	33.7	5.6
Total Identified	90	637.4	7.1
Total Unidentified	570	1810.2	3.2
Total	660	2447.6	3.7

Note: The "No." column is the number of bone fragments, the "Weight" is in grams, and "cf." designates uncertain identifications.

There are also several domestic cat (*Felis domesticus*) and cat (Family Felidae) bones (n=2 and n=1, respectively). Several non-specific mammal taxa are represented in this assemblage. The sheep/goat, deer, and pig taxon (Order Artiodactyla I), contains two fragments. This taxon exists because of the similarity in size and structure between these medium mammals. Of these three animals, pig has the largest number of structural differences from the rest of the group. As a result, another taxon exists for bones that are not pig, but could be either sheep/goat or deer. This taxon is sheep/goat or deer (Order Artiodactyla II). There is one bone in this assemblage identified to this category.

The remaining four taxa -- mammal, large mammal, medium mammal, and small mammal (Class Mammal, Class Mammalia I, Class Mammalia II, and Class Mammalia III), are used for fragments that could only be identified to a very general level. The vast majority of the bones in these taxa are either not identified by element, or are fragments of vertebrae, long bones, or ribs.

Relative Dietary Importance and Modifications. The main species for the examination of modifications are pig and cow. The evidence of butchering is relatively equal between the two (pig=10.4% and cow=12.5%). Both species also show a relatively high percentage of rodent chewing (pig=14.6% and cow=12.5%).

According to biomass, domesticates were the most important species and include pig (12.8%), cow (10.9%), sheep (1.7%), and two galliformes (turkey and chicken) 1.0%. The domesticates, then, account for a total of 26.4% of the biomass of the entire assemblage (Table 7.6). The single cottontail bone is the only definite wild taxa, although it is possible that the turkey bones represent a wild species.

Context E (Megastrata VI and VII)

This assemblage dates from the 1820s to about 1841, and is associated with Park Building 48's unknown occupants. This assemblage, the earliest from the site, is also the largest (n=810). Nineteen taxa are identified to this assemblage: two fish, five bird, and twelve mammal (Table 7.7). A brief description of the taxa follows.

Piscine Remains. The fish taxa consist of two sucker (Family Catostomidae) and five bony fish (Class Osteichthyes) bones. Sucker fish are prevalent in the rivers that surround the town. The sucker probably reflects the utilization of local fauna.

Avian Remains. Two bird species are identified: chicken (*Gallus gallus*) and turkey (*Meleagris gallopavo*). Both of these Galliformes are common domestic birds, but they imply different food procurement strategies. For instance, if the chicken bones represent the raising of chickens on the site, then they also indicate the production and probable consumption of eggs. However, the chicken bones may also represent market purchases. On the other hand, turkey may represent the utilization of wild fauna, or, since wild and domestic turkey are the same species, they could be either a market purchase, raised on the site, or hunted.

The three fragments categorized as grouse, partridge or pheasant (Family Phasianidae) could also be chicken or turkey. It is frequently difficult to distinguish the members of this

Table 7.6. Summary table for Context D.

Taxon	No.	Pct.	MNI	Pct.	Meat Weight (lbs)	Total Meat Wt. (lbs)	Pct.	Weight (gms)	Pct.	Biomass (kgs)	Pct.
Class Osteichthyes (Bony Fish)	2	0.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	0.2	0.0	0.00	0.0
Family Catostomidae (Sucker)	1	0.2	1/ 0	5.6	0.0/ 0.0	0.0	0.0	0.2	0.0	0.00	0.0
Class Aves (Bird)	74	11.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	62.4	2.5	0.23	2.7
Family Phasianidae	3	0.5	0/ 0	0.0	0.0/ 0.0	0.0	0.0	1.5	0.1	0.01	0.1
Meleagris gallopavo (Turkey)	2	0.3	1/ 0	5.6	7.5/ 7.5	7.5	0.8	9.7	0.4	0.04	0.5
cf. Meleagris gallopavo	1	0.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	1.4	0.1	0.01	0.1
Gallus gallus (Chicken)	5	0.8	2/ 0	11.1	2.5/ 1.0	5.0	0.5	6.9	0.3	0.03	0.4
Class Mammalia (Mammal)	341	51.7	0/ 0	0.0	0.0/ 0.0	0.0	0.0	573.1	23.4	1.86	22.2
Class Mammalia I (Large Mammal)	46	7.0	0/ 0	0.0	0.0/ 0.0	0.0	0.0	723.0	29.5	2.29	27.4
Class Mammalia II (Med. Mammal)	74	11.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	414.7	16.9	1.39	16.6
Class Mammalia III (Sm. Mammal)	33	5.0	0/ 0	0.0	0.0/ 0.0	0.0	0.0	36.8	1.5	0.16	1.9
Sylvilagus floridanus (Cottontail)	1	0.2	1/ 0	5.6	2.0/ 2.0	2.0	0.2	0.9	0.0	0.01	0.1
Order Rodentia (Rodent)	1	0.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	0.2	0.0	0.00	0.0
Rattus spp. (Old World Rat)	8	1.2	4/ 0	22.2	0.0/ 0.0	0.0	0.0	2.6	0.1	0.01	0.2
cf. Family Felidae (Domestic Cat)	1	0.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	2.8	0.1	0.02	0.2
cf. Felis domesticus	2	0.3	1/ 0	5.6	0.0/ 0.0	0.0	0.0	8.9	0.4	0.04	0.5
Order Artiodactyla I	2	0.3	0/ 0	0.0	0.0/ 0.0	0.0	0.0	21.1	0.9	0.10	1.1
Order Artiodactyla II	1	0.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	8.4	0.3	0.04	0.5
Sus scrofa (Domestic Pig)	43	6.5	5/ 0	27.8	100.0/ 50.0	500.0	50.0	257.4	10.5	0.90	10.8
cf. Sus scrofa	5	0.8	0/ 0	0.0	0.0/ 0.0	0.0	0.0	40.1	1.6	0.17	2.0
Bos taurus (Domestic Cow)	5	0.8	1/ 1	11.1	400.0/ 50.0	450.0	45.0	153.8	6.3	0.57	6.8
cf. Bos taurus	3	0.5	0/ 0	0.0	0.0/ 0.0	0.0	0.0	87.8	3.6	0.34	4.1
Ovis aries/Capra hircus (Sheep/Goat)	6	0.9	1/ 0	5.6	35.0/ 15.0	35.0	3.5	33.7	1.4	0.15	1.7
TOTALS	660	100.0	10	100.0	--.-/-.--	999.5	100.0	2447.6	100.0	8.36	100.0

The "No." column refers to the number of bones identified to that taxon. The MNI column refers to the Minimum Number of Individuals. The number before the slash is the number of adults and the number of immature specimens follows the slash. The slash separates the adult/immature animals in the Meat Weight column as well. The Meat Weight column is the meat weight of the entire animal. The "Total Meat Weight" column is derived by multiplying the MNI by the Meat Weight and then adding the two sides of the slash together. The "Weight" column is the weight of the actual archeological bones.

Table 7.7. Identified taxa for Context E, including the number, weight, and average weight of the bones.

Taxon	No.	Weight	Avg. Wt.
Bony Fish	5	0.9	0.2
Sucker	2	0.7	0.4
Bird	89	53.8	0.6
Bird/Small Mammal	1	2.5	2.5
Grouse, Partridge, or Pheasant	1	0.6	0.6
cf. Grouse, Partridge, or Pheasant	2	2.8	1.4
cf. Turkey	1	3.6	3.6
Chicken	3	3.9	1.3
cf. Chicken	2	1.1	0.6
Mammal	398	706.4	1.8
Large Mammal	84	1652.9	19.7
cf. Large Mammal	1	20.1	20.1
Medium Mammal	85	422.2	5.0
Small Mammal	14	21.8	1.6
cf. Eastern Gray Squirrel	2	0.9	0.5
Old World Rat	6	0.8	0.1
Sheep, Goat, Deer, or Pig	10	162.6	16.3
Sheep, Goat, or Deer	4	31.2	7.8
Domestic Pig	67	525.6	7.8
cf. Domestic Pig	3	42.0	14.0
cf. White-Tailed Deer	1	1.0	1.0
Domestic Cow	9	557.9	62.0
cf. Domestic Cow	8	576.2	72.0
Domestic Sheep or Goat	8	211.4	26.4
cf. Domestic Sheep or Goat	4	78.3	19.6
Total Identified	133	2200.6	16.5
Total Unidentified	677	2880.6	4.3
Total	810	5081.2	6.3

Note: The "No." column is the number of bone fragments, the "Weight" is in grams, and "cf." designates uncertain identifications.

Family, especially if the individuals are young, or the bones are particularly fragmentary. There are several (n=89) avian bones identified only to bird (Class Aves). These are generally fragmentary, or unidentifiable long bone shafts.

Wild Mammals. Three wild mammal species are identified to Context E: eastern gray squirrel (*Sciurus carolinensis*), old world rat (Rattus spp.), and white-tailed deer (*Odocoileus virginianus*). While the two squirrel bones do not have any butchering evidence, it is possible that they indicate the consumption of squirrels. The other possibility is that these bones represent natural death.

The other wild species that possibly indicates the utilization of local fauna is the deer represented by only one bone (a molar). The rat bones represent a commensal species.

Domestic Mammals. The domestic mammals in Context E are the domestic triad: pig (*Sus scrofa*), cow (*Bos taurus*), and sheep/goat (*Ovis aries/Capra hircus*). The seventeen cow bones make up the largest biomass percentage of any species (22.5%). The pig and sheep/goat are the second and third most important species by biomass (11.6% and 6.5%, respectively) (Appendix 7.A; Tables 7.A.3, 7.A.4 and 7.A.5).

The sheep/goat, deer, or pig taxon (Order Artiodactyla I) exists because it is frequently difficult to differentiate between these structurally similar species. There are also four bones identified to the sheep/goat or deer taxon (Order Artiodactyla II).

The mammals bones that could not be assigned to a particular species, or even Family, are included in the four remaining taxa: mammal (Class Mammalia), large mammal (Class Mammalia I), medium mammal (Class Mammalia II), and small mammal (Class Mammalia III). The vast majority (97%) of the bones identified simply as mammal are unidentified elements. This phenomenon is an indication of the fragmentary nature of these bones.

The 85 large mammal bones are mostly vertebra, rib, and long bone fragments. The medium mammal bones (also n=85) are also primarily fragments of the same elements. There are fourteen small mammal bones that could not be identified further.

Relative Dietary Importance and Modifications. According to biomass (Table 7.8), the most important species is cow (22.5%), followed by pig (11.6%) and sheep/goat (6.5%). If the value for the chicken (0.1%) is added, then the domesticates account for 40.7% of the biomass of the entire assemblage. The squirrel, deer, and sucker bones all may indicate the use of local fauna for consumption. The turkey bone may also be from a wild rather than domestic species, since it is almost impossible to osteologically differentiate between the two.

The difference in butchering mark recognition can be explained by the use of cleavers versus saws. A saw mark is readily recognizable, it is almost invariably straight, and generally has noticeable striations along the cut surface created by the sawing motion. With cleavers and axes there are two ways of butchering; breaking and shearing. A stout longbone may require the use of an axe or cleaver as a percussion tool, rather than a cutting instrument, resulting in a somewhat jagged break. An axe or cleaver shear cut is also slightly different from a saw cut mark. A result of cleaver breaking is often fractures on the bone perpendicular to the break. Taphonomic pressures can then incur more damage to the bones, especially when small cracks

Table 7.8. Summary table for Context E.

Taxon	No.	Pct.	MNI	Pct.	Meat Weight (lbs)	Total Meat Wt. (lbs)	Pct.	Weight (gms)	Pct.	Biomass (kgs)	Pct.
Class Osteichthyes (Bony Fish)	5	0.6	0/ 0	0.0	0.0/ 0.0	0.0	0.0	0.9	0.0	0.01	0.0
Family Catostomidae (Sucker)	2	0.2	1/ 0	5.9	0.0/ 0.0	0.0	0.0	0.7	0.0	0.01	0.1
Class Aves (Bird)	89	11.0	0/ 0	0.0	0.0/ 0.0	0.0	0.0	53.8	1.1	0.20	1.2
Class Aves/Mammalia III (Bird/Mammal)	1	0.1	0/ 0	0.0	0.0/ 0.0	0.0	0.0	2.5	0.0	0.01	0.1
Family Phasianidae	1	0.1	0/ 0	0.0	0.0/ 0.0	0.0	0.0	0.6	0.0	0.00	0.0
cf. Family Phasianidae	2	0.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	2.8	0.1	0.01	0.1
cf. Meleagris gallopavo (Turkey)	1	0.1	1/ 0	5.9	7.5/ 7.5	7.5	0.7	3.6	0.1	0.02	0.1
Gallus gallus (Chicken)	3	0.4	2/ 1	17.6	2.5/ 1.0	6.0	0.6	3.9	0.1	0.02	0.1
cf. Gallus gallus	2	0.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	1.1	0.0	0.01	0.0
Class Mammalia (Mammal)	398	49.1	0/ 0	0.0	0.0/ 0.0	0.0	0.0	706.4	13.9	2.24	13.7
Class Mammalia I (Large Mammal)	84	10.4	0/ 0	0.0	0.0/ 0.0	0.0	0.0	1652.9	32.5	4.82	29.5
cf. Class Mammalia I	1	0.1	0/ 0	0.0	0.0/ 0.0	0.0	0.0	20.1	0.4	0.09	0.6
Class Mammalia II (Med. Mammal)	85	10.5	0/ 0	0.0	0.0/ 0.0	0.0	0.0	422.2	8.3	1.41	8.6
Class Mammalia III (Sm. Mammal)	14	1.7	0/ 0	0.0	0.0/ 0.0	0.0	0.0	21.8	0.4	0.10	0.6
cf. Sciurus carolinensis (Squirrel)	2	0.2	1/ 0	5.9	1.0/ 1.0	1.0	0.1	0.9	0.0	0.01	0.0
Rattus spp. (Old World Rat)	6	0.7	1/ 0	5.9	0.0/ 0.0	0.0	0.0	0.8	0.0	0.01	0.0
Order Artiodactyla I	10	1.2	0/ 0	0.0	0.0/ 0.0	0.0	0.0	162.6	3.2	0.60	3.7
Order Artiodactyla II	4	0.5	0/ 0	0.0	0.0/ 0.0	0.0	0.0	31.2	0.6	0.14	0.8
Sus scrofa (Domestic Pig)	67	8.3	3/ 1	23.5	100.0/ 50.0	350.0	34.3	525.6	10.3	1.72	10.5
cf. Sus scrofa	3	0.4	0/ 0	0.0	0.0/ 0.0	0.0	0.0	42.0	0.8	0.18	1.1
cf. Odocoileus virginianus (Deer)	1	0.1	1/ 0	5.9	100.0/100.0	100.0	9.8	1.0	0.0	0.01	0.0
Bos taurus (Domestic Cow)	9	1.1	1/ 1	11.8	400.0/ 50.0	450.0	44.1	557.9	11.0	1.81	11.1
cf. Bos taurus	8	1.0	0/ 0	0.0	0.0/ 0.0	0.0	0.0	576.2	11.3	1.87	11.4
Ovis aries/Capra hircus (Sheep/Goat)	8	1.0	3/ 0	17.6	35.0/ 15.0	105.0	10.3	211.4	4.2	0.76	4.6
cf. Ovis aries/Capra hircus	4	0.5	0/ 0	0.0	0.0/ 0.0	0.0	0.0	78.3	1.5	0.31	1.9
TOTALS	810	100.0	17	100.0	--.-/-.--	1019.5	100.0	5081.2	100.0	16.34	100.0

The "No." column refers to the number of bones identified to that taxon. The MNI column refers to the Minimum Number of Individuals. The number before the slash is the number of adults and the number of immature specimens follows the slash. The slash separates the adult/immature animals in the Meat Weight column as well. The Meat Weight column is the meat weight of the entire animal. The "Total Meat Weight" column is derived by multiplying the MNI by the Meat Weight and then adding the two sides of the slash together. The "Weight" column is the weight of the actual archeological bones.

have been made by the breaking process. Taphonomic factors, then, can render cleaver butchering marks even more difficult to discern. It may very well be that the pig and cow bones are both equally butchered, and the apparent disparity between the pig and cow butchering evidence is most likely due to butchering technique.

The most noticeable butchering trend is the difference between pig and cow. Only 4% of the pig bones exhibit butchering evidence, whereas almost 65% of the cow bones show butchering. Almost all of the cow butchering marks are the result of sawing. One-third of the pig butchering marks consist of axe or cleaver marks and the remaining two-thirds are probably saw marks. This pattern of cow butchering with a saw and pig with an axe or cleaver is also evident in other nineteenth-century archeological assemblages (Castille 1982; Wilson 1986). This pattern may imply different sources for the cow and pig meat, but does not explain the low percentage of butchering evidence for pig. Since pigs were commonly kept by many households in town, and pig butchering was often done with a cleaver or axe, it may be speculated that the pigs represent a domestically butchered species.

DISCUSSION

This discussion focuses on Contexts D and E, the armory occupation. Context E dates from the 1820s to about 1841. The occupants of Park Building 48 are unknown, although they were probably armory workers. Context D dates from about 1841 through 1850, and the many residents of the structure during this period were armory employees and their families. Since it is impossible to discuss the assemblages as refuse deposition from one family unit, the assemblages will be interpreted by examining the local context.

The wild animal species of the two assemblages are similar. Both have a low number of fish, with suckers as the only identified Family. These fish are readily available in the rivers around Harpers Ferry. There is a minor difference in the small mammals evident in the assemblages: Context D has a cottontail bone, and Context E has two squirrel bones. All of these may represent the hunting of small, local wild mammals. In fact, the only significant difference in wild animals between the assemblages is the presence of white-tailed deer in Context E.

The domestic animals dominate both of the assemblages and include chicken, pig, cow, and sheep/goat. The combined domesticate biomass for Context D is 25.8%, and for E it is 40.7%. This difference may largely be due to the level of identification of the assemblage. That is, since Context D was only 26.0% identified (by weight), as compared to 43.3% for Context E, the biomass values are somewhat misleading. The unidentified mammal bones comprise a much larger biomass percentage of Context D (68.1%) than Context E (53.0%).

Despite the biomass differences, it is obvious that both of the assemblages are dominated by domesticates. One method of inter-context comparison is examination of the ratios of the types of domesticates within the two contexts. Context D mammals have a pig:cow:sheep biomass ratio of 8:6:1, and Context E has a cow:pig:sheep ratio of 3:2:1. The earlier context (Context E) has a higher percentage of cow than pig and the reverse is true in the later assemblage. The sheep/goat species also becomes significantly less important over time.

In this category of butchering evidence, there is a significant difference between the two assemblages. In Context E, the earlier assemblage, 65% of the cow bones appear butchered, in contrast to only 4% of the pig bones. In Context D, the cow and pig butchering evidence is approximately equal (12.5% and 10.4%, respectively). It is possible that in the earlier assemblage, the difference in butchering evidence is largely due to differential butchering techniques for the two species. Butchering with saws would be more evident than butchering with an axe or cleaver. The pigs may very well have been raised and butchered with axes at home, whereas the cow was sawn in predetermined and standardized cuts and sold at a market.

The differences in both relative dietary importance and evident butcher marks may be due to several factors. There were many changes underway in Harpers Ferry during the period of time that separates these contexts. There was a change in household composition as the number of inhabitants increased when the structure became a duplex. It is distinctly possible that the majority of the differences in the faunal assemblages may be a reflection of the personal preferences of the new tenants, although other possibilities need to be explored.

The arrival of the canal and railroads as well as changes in the management of the armory all occurred at approximately the same time as the break between these two assemblages. As a result, it is possible to examine the differences between the assemblages within this local context. The first change was the arrival of the canal and the railroad which had a massive impact on the local market systems. The town became a collection point for produce from the surrounding counties to be sent to the eastern cities. And, at the same time, Harpers Ferry began receiving daily shipments of goods from the urban centers. In general, this enlarged market network, along with an increasingly industrial outlook, led to a change in production centers. Foods were increasingly purchased at market rather than being produced at home.

Another change in town life involved the armory which employed the residents associated with Park Building 48's Context D and probably Context E. During the 1830s the armory management introduced new machinery. The armory's focus became industrial production, shifting away from the craft orientation that had previously defined working conditions. In 1841 the superintendent imposed work discipline. The sudden appearance of factory discipline caused some disruption among the workers. The introduction of the time clock standardized work practices and shifted the workers' world views from the agrarian/craft to industrial labor.

The increase in relative dietary importance of pig in the later assemblage may indicate an increase in home production and contradicts what would be expected given the new and expanding market place. The Park Building 48 inhabitants may have been financially unable to participate in the new markets, or perhaps they reacted to the changes by withdrawing into a system of increased home autonomy. The changes in foodways evident in the assemblages could be a reaction against the growing industrial capitalism evident in both the work and market places of Harpers Ferry.

APPENDIX 7.A

DATA TABLES

Table 7.A.1. Element distribution for Context B chicken (*Gallus gallus*).

Element Type	No.	Pct.
Skull	0	0.0
Mandible	0	0.0
Sternum	0	0.0
Furculum	0	0.0
Vertebra	0	0.0
Rib	0	0.0
Synsacrum	1	10.0
Pelvis	0	0.0
Scapula	0	0.0
Coracoid	1	10.0
Humerus	2	20.0
Ulna	0	0.0
Radius	1	10.0
Carpometacarpus	2	20.0
Femur	1	10.0
Tibiotarsus	2	20.0
Tarsometatarsus	0	0.0
Phalange	0	0.0
Other	0	0.0
TOTAL	10	100.0

Table 7.A.2. Element distribution for Context D domestic pig (*Sus scrofa*).

Element Type	No.	Pct.
Skull	3	6.3
Antler	0	0.0
Mandible	1	2.1
Tooth	11	22.9
Vertebra	4	8.3
Rib	0	0.0
Innominate	0	0.0
Scapula	1	2.1
Humerus	0	0.0
Ulna	4	8.3
Radius	1	2.1
Carpal	0	0.0
Metacarpal	0	0.0
Femur	0	0.0
Tibia	0	0.0
Fibula	11	22.9
Tarsal	5	10.4
Metatarsal	1	2.1
Metapodial	5	10.4
Phalange	1	2.1
Sesamoid	0	0.0
Other	0	0.0
TOTAL	48	100.0

Table 7.A.3. Element distribution for Context E domestic pig (*Sus scrofa*).

Element Type	No.	Pct.
Skull	25	35.7
Antler	0	0.0
Mandible	1	1.4
Tooth	19	27.1
Vertebra	1	1.4
Rib	0	0.0
Innominate	0	0.0
Scapula	2	2.9
Humerus	2	2.9
Ulna	1	1.4
Radius	3	4.3
Carpal	0	0.0
Metacarpal	1	1.4
Femur	0	0.0
Tibia	0	0.0
Fibula	6	8.6
Tarsal	1	1.4
Metatarsal	0	0.0
Metapodial	0	0.0
Phalange	4	5.7
Sesamoid	0	0.0
Other	4	5.7
TOTAL	70	100.0

Table 7.A.4. Element distribution for Context E domestic cow (*Bos taurus*).

Element Type	No.	Pct.
Skull	0	0.0
Antler	0	0.0
Mandible	0	0.0
Tooth	0	0.0
Vertebra	3	17.6
Rib	0	0.0
Innominate	3	17.6
Scapula	1	5.9
Humerus	0	0.0
Ulna	2	11.8
Radius	3	17.6
Carpal	0	0.0
Metacarpal	1	5.9
Femur	1	5.9
Tibia	1	5.9
Fibula	0	0.0
Tarsal	0	0.0
Metatarsal	0	0.0
Metapodial	0	0.0
Phalange	1	5.9
Sesamoid	0	0.0
Other	1	5.9
TOTAL	17	100.0

Table 7.A.5. Element distribution for Context E sheep/goat (*Ovis aries*/*Capra hircus*).

Element Type	No.	Pct.
Skull	0	0.0
Antler	0	0.0
Mandible	0	0.0
Tooth	0	0.0
Vertebra	0	0.0
Rib	0	0.0
Innominate	0	0.0
Scapula	0	0.0
Humerus	1	8.3
Ulna	0	0.0
Radius	2	16.7
Carpal	0	0.0
Metacarpal	0	0.0
Femur	2	16.7
Tibia	1	8.3
Fibula	0	0.0
Tarsal	5	41.7
Metatarsal	0	0.0
Metapodial	0	0.0
Phalange	1	8.3
Sesamoid	0	0.0
Other	0	0.0
TOTAL	12	100.0

CHAPTER 8

POLLEN AND MACROFLORAL ANALYSIS ON SAMPLES FROM PARK BUILDING 48, HARPERS FERRY NATIONAL HISTORICAL PARK, WEST VIRGINIA

Linda Scott Cummings and Kathryn Puseman

INTRODUCTION

Pollen and macrofloral samples were examined from three excavation units in front of Park Building 48 at Harpers Ferry National Historical Park in West Virginia (Figure 8.1). Since trash was dumped in front of this building, one or more of these excavation units may include trash deposits. Park Building 48 was constructed during the 1820s and probably housed armory workers and their families until the Civil War. After the Civil War, Park Building 48 served as a tenement until the 1950s. It is the pre-Civil War period that is represented in the majority of the pollen and macrofloral samples. Excavation Unit 10 provides an intermittent record from the 1820s to the 1990s, and was examined in part for comparative purposes. Only the earliest samples representing the pre-Civil War occupation were examined from Excavation Units 1 and 5. Previous pollen and macrofloral analyses of Package 116 (Block B, Lot 2 and 3) at Harpers Ferry provided information identifying formality of the landscape at the master armorer's residence in the 1820s, and a subsequent decline in the landscaping after the 1830s and 1840s. This decline coincides with the acceptance of industry in the United States. The armory was modernized beginning in the 1830s, and the armory grounds were renovated. The military took control of the armory's superintendency in 1841. As a result, uniformity was created in the architectural and landscape design of Harpers Ferry.

Conditions around Park Building 48 during these times are represented in the pollen and macrofloral samples. Evidence of the armory worker's diet may be seen in kitchen debris that was dumped in front of the building. These samples will also be examined for evidence of formalization and possible subsequent deterioration of the landscape similar to that noted at the master armorer's residence.

METHODS

A chemical extraction technique based on flotation is the standard preparation technique used in this laboratory for the removal of the pollen from the large volume of sand, silt, and clay with which they are mixed. This particular process was developed for extraction of pollen from soils where preservation has been less than ideal and pollen density is low.

Hydrochloric acid (10%) was used to remove calcium carbonates present in the soil, after which the samples were screened through 150 micron mesh. Zinc bromide (density 2.0) was

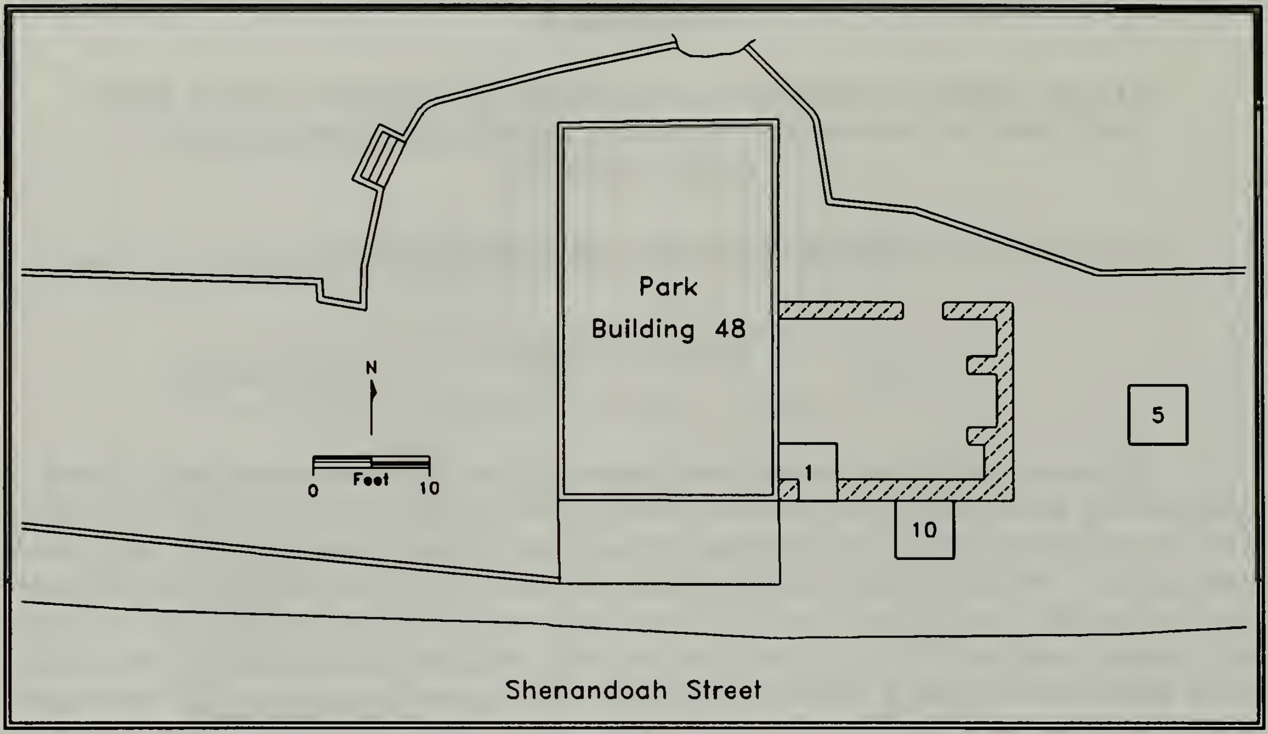

Figure 8.1. Plan of Park Building 48 showing location of Excavation Units 1, 5, and 10 for pollen and macrofloral sampling.

used for the flotation process. The samples were mixed with zinc bromide while still moist, immediately after centrifugation to remove the dilute hydrochloric acid and water. All samples received a short (10 minute) treatment in hot hydrofluoric acid to remove any remaining inorganic particles. The samples were then acetolated for 3 minutes to remove any extraneous organic matter.

A light microscope was used to count the pollen to a total of 100 to 200 pollen grains at a magnification of 500x. Pollen preservation in these samples varied from good to poor. Comparative reference material collected at the Intermountain Herbarium at Utah State University and the University of Colorado Herbarium was used to identify the pollen to the family, genus, and species level, where possible.

Pollen aggregates were recorded during identification of the pollen. Aggregates are clumps of a single type of pollen, and may be interpreted to represent pollen dispersal over short distances, or the actual introduction of portions of the plant represented into an archeological setting. Aggregates were included in the pollen counts as single grains, as is customary. The presence of aggregates is noted by an "A" next to the pollen frequency on the pollen diagram. A "T" on the pollen diagram indicates that the pollen type was observed outside the regular count while scanning the remainder of the microscope slide.

Indeterminate pollen includes pollen grains that are folded, mutilated, and otherwise distorted beyond recognition. These grains are included in the total pollen count, as they are part of the pollen record.

The macrofloral samples were floated using a modification of the procedures outlined by Matthews (1979). One liter of sample was added to approximately 3 gallons of water. The sample was stirred until a strong vortex formed, which was allowed to slow before pouring the light fraction through a 150 micron mesh sieve. Additional water was added and the process repeated until all visible macrofloral material was removed from the sample (a minimum of 3 times). The material which remained in the bottom was poured through a 1mm mesh screen. The floated portions were allowed to dry.

The light fractions were passed through a series of graduated screens (US Standard Sieves with 2mm, 1mm, .5mm and .25mm openings) to separate charcoal debris and to initially sort the seeds. The contents of each screen were then examined. Charcoal pieces larger than 2mm in diameter were broken to expose a fresh cross-section and examined under a binocular microscope at magnifications up to 80x. The material which remained in the 2mm, 1mm, and .5mm sieves was scanned under a binocular stereo microscope at a magnification of 8x, with some identifications requiring magnifications of up to 40x. A portion of the finest material in the .25mm screen was also examined under a magnification of 8x. The material which passed through the .25 mm screen was not examined. The coarse or heavy fractions were also examined. Macrofloral remains were identified using manuals (Martin and Barkley 1973; Musil 1978; Schopmeyer 1974) and by comparison with modern and archeological references. Estimates of frequencies were calculated from the sort of a portion of the total volume floated and are represented in the macrofloral table by an asterisk (*). The term "seed" is used to represent seeds, achenes, caryopses, and other disseminules. Remains were recorded as charred and/or uncharred, whole and/or fragments.

DISCUSSION

Park Building 48 is located several hundred feet from Virginius Island, an industrial area that became part of Harpers Ferry. The building was probably occupied by armory workers from the 1820s to the Civil War. Excavation Units 1, 5, and 10 were divided into megastrata representing different time periods. Megastrata IV-VII represent the time of the armory workers' occupation, with Megastrata VI and VII (Context E elsewhere in the report) dating to the time prior to construction of a west wing addition to Park Building 48 in 1841. These strata represent the time of formalized landscapes, gardens, and orchards that were found in the town prior to industrialization of the area. Megastrata IV and V (Context D elsewhere in the report) represent the 1840s when the area underwent industrialization and uniformity. Megastrata II and III (Context B and C elsewhere in the report), not represented in the pollen and macrofloral samples, represent the post-Civil War occupation when Park Building 48 served as a tenement from the mid nineteenth century to the early twentieth century. Megastratum I represents the late twentieth century. Pollen and macrofloral samples were examined from Megastratum I (Context A elsewhere in the report) in order to provide a basis for modern comparison.

Ethnobotanical Review

Pollen and macrofloral analyses identified remains of several types of plants. Some of these plants represent potential and/or probable food resources, while others represent weeds or other plants that probably grew nearby. These types of plants will be discussed in the following paragraphs to provide basic information concerning their origins and uses. Pollen and macrofloral remains will also be discussed.

Edible and Economically Important Plants

Fig (*Ficus*) is a native of Asia minor that was imported into the Mediterranean area and used by the Egyptians 6000 years ago. The fig reached the United States around 1790, although it was not commercially cultivated until the 1900s (McGee 1984). Figs can be eaten raw, preserved, dried and canned. Cultivated figs are not commonly grown in northern states.

Strawberry (*Fragaria*) is a flavorful, sweet and delicious fruit. The berries may be eaten fresh or cooked in jams and jellies. The leaves can be used to make a tea. Although the fruit is smaller, wild strawberries are much tastier than today's domestic varieties (Peterson 1977). Wild strawberries are found in sandy, often moist, ground, and in open woods, fields and hillsides (Kirk 1975).

Members of the mint (Lamiaceae) family are often grown for use as flavoring, as tea, and as medicine. The leaves and flower stalks of horehound (*Marrubium*) are used in the preparation of certain cough medicines and for flavoring horehound candy. It is a perennial herb found around old buildings, along roadsides, on ditch banks, and in old fields, pastures, ranges and waste places (Britton and Brown, Volume 3 1970:110; Martin 1972:102; Muenscher 1987:376). The leaves of heal-all/self-heal (*Prunella*) are commonly used to make a tea for fevers and diarrhea, or as a gargle for sore throats and mouth sores. The leaves may be applied externally to bruises, sores, wounds, and ulcers. *Prunella* can also become a troublesome weed. It spreads by rooting at each stem joint, and herbicides may be required to control it. *Prunella* is a low-growing perennial found in waste places and lawns (Foster and Duke 1990:192; Martin 1972:100).

Tomato (*Lycopersicon esculentum*) was domesticated in Mexico and is noted to have been cultivated by Thomas Jefferson in 1781 in Virginia. It was not until approximately the mid-1800s that tomatoes began to gain popularity in the United States (Hedrick 1972:343-345). The seeds are small and numerous in each fruit. Tomatoes are often consumed raw and in salads, although they are also used in sauces, stews, and soups. Tomatoes may also be included in preserves and jams, either alone or in combination with other fruits. The seed is round and hairy when dry, exhibiting a thin seed coat. The plant is very adaptable, sometimes re-seeding the following year in the garden or compost areas.

Tomatillo/ground cherry (*Physalis*) was domesticated in Mexico and naturalized in Eastern North America. The berries may be eaten raw or cooked and made into preserves and pies, but taste best when fully ripe. Boiled berries are frequently used in sauces such as chile verde and green chile. Some species are commercially cultivated for their berries. Ground cherries are found in moist to medium dry, open ground throughout the West (Kirk 1975).

The young shoots of pokeweed/pokeberry (*Phytolacca americana*) are often cooked as potherbs, and Millspaugh (1974:558) notes that "the young shoots make an excellent substitute for asparagus." The peeled shoots can also be boiled and pickled. The roots, seeds, and mature stems contain phytolaccin and are poisonous. The berries are reported to be poisonous when green, but the ripe berries can be cooked and made into pies and jellies. Although poisonous when eaten, the roots and other parts of pokeweed (*Phytolacca*) plants have been used medicinally. The root has been used as an emetic, and as a treatment for fevers and other illnesses. Millspaugh (1974) reports that the root mixed with lard was used for skin diseases, while Angell (1981) cites that poultices of dried pokeweed (*Phytolacca*) leaves were used. It is locally common from Maine to Minnesota and southward, but seldom becomes a serious weed. It is found in thickets, meadows, cultivated fields, pasture lands, waste places, and open places, mostly on rich, gravelly soils (Kirk 1975:232; Martin 1972:50; Muenscher 1987:197; Peterson 1977:46).

The raspberry (*Rubus*) group includes blackberry, cloudberry, dewberry, salmonberry, thimbleberry, wineberry and yellowberry. All species of *Rubus* produce edible berries which can be eaten raw or made into cobblers, jams, jellies and pies. The fruit can also be used in cold drinks, teas and salads and is easily dried and preserved. The fruit of some species is even used to make a liquor. The dried leaves can be used to make tea, and tender blackberry shoots can be added fresh to salads. *Rubus* plants are commonly found in sunny thickets and mountainous areas, especially at higher altitudes (Angell 1981; Hedrick 1972; Medsger 1966; Peterson 1977).

Elderberry (*Sambucus*) berries are usually purplish-black, but can be red, blue and purple. The red berries are reported to be poisonous. Fresh berries of most species are rank smelling and mildly unpleasant tasting; however, the berries can be prepared in pastries, preserves and wines. The berries can also be dried to remove the unpleasant odor and taste. They are then added to muffins, fruit stews and pie fillings. Elderberries are high in Vitamins A and C, thiamine, calcium, and niacin, and contain iron and potassium. The flowers of elderberry (*Sambucus canadensis*) are sometimes mixed with batter and baked into cakes. The bark of its shrubs was simmered in lard to make an ointment for chafed skin, rashes, abrasions, ulcers, and burns. The fruits and flowers were poulticed for treating rheumatism, sores, and burns. Flowers were steeped in hot water to make a tea for treating fevers, while a flower tea made with peppermint was used to treat stomachaches. Flower water was also used for sunburns and as an eyewash. Berries were fermented to make a tonic wine and a cooling lotion for feverish patients (Angier 1986:113-117; Krochmal and Krochmal 1978:198-199; Peterson 1977:172). Elderberry (*Sambucus*) plants are found in rich damp soils along stream banks, in roadside ditches, in thickets and open woods, and on mountain slopes where there is adequate moisture (Angell 1981; Kirk 1975; Medsger 1966; Peterson 1977).

Many different species of grape (*Vitis*) are native to the United States and produce edible fruit. Some cultivated grapes, such as the Concord grape, were derived from wild species (Medsger 1966:53-59). The seeds of the wild species are often large for the size of the berry. Grapes can be eaten raw or used in jams, jellies, cold drinks and for making wine. Generally wild grapes need more sweetening than cultivated grapes (Peterson 1977). The young leaves can be cooked as greens or used to wrap meat for baking. "In various parts of the world, including the West in pioneer times, grape leaves soaked in water were used as a poultice for wounds." Internally and externally, the leaves would cure snake bites and disorders of the internal organs (Peterson 1977). Wild grapes are found throughout the Southwest and Northeast growing in thickets and edges of woods (Medsger 1966:53-59).

Corn (*Zea mays*) is a New World cultigen that has been an important cultivated food and has become a common garden plant. Corn may be cooked in a variety of ways. Fresh ears may be cooked and eaten either on or off the cob. Popcorn comes from a genetic variation of corn (*Zea mays*). The dried kernels are heated until they pop.

Weeds

Muenscher (1987:3) describes weeds as "those plants that grow where they are not wanted. Whether a plant of a given species is considered a weed depends not only on its characteristics and habitats, but also on its relative position with reference to other plants and man." Weeds are often able to thrive in diverse and adverse circumstances. They are commonly found in disturbed or in places undesirable to other plants. Many weed species produce enormous quantities of seeds, and these seeds are often widely dispersed. Other weed species are capable of reproducing vegetatively. These factors combine to produce a plant that is very successful in competition with other plant species. The word "weed" is assigned here to those plants that most likely represent native vegetation and were probably not eaten by the occupants of Park Building 48. Some of these genera and families also include cultivated flowers, and are so noted below.

Pigweed (*Amaranthus*) is a weed that commonly grows along roadsides and waste places and in disturbed ground. Some species grow in moist ground, while other species are cultivated, such as cockscomb (*Celosia*) (Fernald 1950:602-604).

St. Peterswort/St. Andrewscross (*Ascyrum*) plants are leafy low shrubs with yellow flowers. They are found on moist or dry soils in meadows, woods, and barrens (Britton and Brown, Volume 2 1970:528; Fernald 1950:1007-1008).

Stonewort (*Chara*) is a submerged algae found in still, nutrient poor waters (Schoch et al. 1988:49).

Goosefoot (*Chenopodium*) is primarily an annual weed, often flowering in the late summer and autumn. The tiny flowers grow in clusters and can produce tens of thousands of seeds per plant. It is commonly found in cultivated fields, waste places, in open woods or thickets, and on stony hills (Fernald 1950:592-596; Martin 1972). It is an opportunistic weed, often establishing itself rapidly in disturbed areas.

The daisy (Compositae or Asteraceae) family is a very large family of over 20,000 species worldwide. Some species such as lettuce (*Lactuca*) and sunflower (*Helianthus*) provide food, while others are popular ornamentals. Most species are weedy, herbaceous plants found in a variety of habitats, some of which include cultivated fields, meadows, waste places, old fields, pastures, gardens, and lawns (Hickey and King 1981:418; Muenscher 1987:422; Niering and Olmstead 1979:354).

Members of the sedge (Cyperaceae) family are perennial or annual, grass-like herbs of wet places, although some are adapted to drier habitats. A number of plants in this family, especially those in the genera sedge (*Carex*), flatsedge (*Cyperus*), and bulrush (*Scirpus*), are found as weeds in grasslands or recently drained areas (Hickey and King 1981:448; Muenscher 1987:152).

Spurge (*Euphorbia*) plants are typically considered to be common, poisonous weedy plants. They occur as annual or perennial herbs, and many species have an acrid milky sap that will irritate the skin and membranes of the eyes and mouth. Although most species are considered bothersome weeds, some species have been used in a variety of ways. Spurge has been used to treat snakebites, asthma, and bronchial congestion. The juice of snow-on-the-mountain (*E. marginata*) has been used in Texas to brand cattle, and other species, such as poinsettia (*E. pulcherina*), are grown as ornamentals. Spurge (*Euphorbia*) is found throughout the United States along roadsides, and in fields, meadows, pastures, waste places, gardens and yards (Kirk 1975:32; Muenscher 1987:298-305; Niering and Olmstead 1979).

Bedstraw/Cleaver's (*Galium*) gets its name from the Greek word *gala* which means "milk." This refers to the old use of this plant to curdle milk to make cheese. These plants have a pleasant aroma when dried and were once used for mattress stuffing. These plants are common weeds found in a variety of habitats, including meadows, fields, lawns, pastures, waste places, and along roadsides (Kirk 1975:127-128; Muencsher 1987:411; Niering and Olmstead 1979:464-465).

Recovery of Poaceae (grass family) seeds is almost expected since grasses are one of the most widely distributed families in the world. Specifically, goosegrass (*Eleusine indica*) is a widespread annual in the eastern United States that was introduced from Asia. It is a common urban weed found in grasslands, gardens, lawns, vacant lots, cultivated areas, and waste places (Martin 1972:19; Muenscher 1987:129). Dropseed (*Sporobolus*) may be an annual or perennial grass. The seeds of certain species may be eaten raw or parched and ground into a flour. It is found in a variety of habitats, including dry prairies, sandy or muddy shores and marshes, saline flats, along roadsides, waste places, and in dry, sandy, sterile, or rocky soils (Fernald 1950; Kirk 1975:181-182).

St. Johnswort and kalamath weed (*Hypericum*) plants are herbs or shrubs with yellow, flesh-colored, or purplish flowers. They may be found in a variety of habitats including stream banks, sandy or rocky soils, old meadows, pastures, roadsides, waste places, bogs, swamps, and woods (Britton and Brown, Volume 2 1970:530-536; Fernald 1950:1010-1015; Martin 1972:314-306).

Morning glory (*Ipomoea*) is generally not a serious weed. The blue, purple, red, pink, or white-flowered vines are commonly seen growing on trellises and fences. Morning glories are found in fields, gardens, and waste places, especially on alluvial soils (Martin 1972:93; Muenscher 1987:352-353).

Carpetweed (*Mollugo*) is a prostrate annual that was introduced from tropical America. This plant gets its name from the low, dense mat it forms when it grows. The whole plant of Indian chickweed (*M. verticullata*) may be used as a potherb. Carpetweed (*Mollugo*) may be found in gardens, lawns, fields, and waste places, especially in sandy soils (Fernald 1950:608; Kirk 1975:50; Martin 1972:51; Muenscher 1987:199).

Wood sorrel (*Oxalis*) is a perennial, low-spreading plant with clover-like leaves. Some grow as weedy wild flowers, while others are grown as ornamentals. The sour leaves may be used in salads or steeped in water to make a drink. A type of rhubarb pie may be made from the sour stems. True wood sorrel (*O. acetosella*) was cultivated in gardens as a minor vegetable but was never used extensively. Wood sorrel (*Oxalis*) is found in rich, damp woods, banks, prairies, roadsides, fields, waste places, and open woods (Kirk 1975:29; Martin 1972:73; Medsger 1966:165; Niering and Olmstead 1979:667-669; Peterson 1977:104).

Polygonum includes both knotweed and smartweed. These plants contain an acrid juice which causes smarting. Most species are annuals, but a few species are perennials. The peppery leaves of certain species may be eaten raw in salads or cooked like spinach. Smartweed and knotweed (*Polygonum*) can become troublesome weeds, but are important foods for song birds, gamebirds, and waterfowl. This species is partial to moist soils in pastures and cultivated fields, along ditches, and on trampled ground about yards, paths, roadsides and waste places (Kirk 1975:56; Martin 1972:40-42; Muenscher 1987).

Purslane (*Portulaca*) is a weedy annual with fleshy leaves and small, black seeds. This plant is one of the better known wild edibles and is considered very nutritious. The leaves and stems are rich in iron and contain Vitamins A and C, calcium, phosphorous, and small amounts of omega-3 fatty acids. The whole plant may be cooked and seasoned like spinach, or added raw to salads. If the plant is not entirely removed from the ground, fleshy stems will take root and mature to seeds. Even when hoed, the stems can stay alive for a long period of time. Purslane (*Portulaca*) may represent either weedy purslane (*Portulaca*) or the cultivated ornamental, rose moss (*P. grandiflora*). *Portulaca* is found in gardens, cultivated fields, lawns, and waste places; mostly on rich soils (Kirk 1975:46; Martin 1972:52; Muenscher 1987; Peterson 1977:72).

Buttercup (*Ranunculus*) are common, perennial or annual plants which are regarded as mildly poisonous. They contain varying amounts of a volatile yellow oil called protoanemoin that can cause intestinal irritation if eaten or skin blisters if handled. Buttercups are found in a variety of habitats including lowland meadows, pastures, fields, lawns, waste places, ditch banks, and shore margins (Kirk 1975:23; Martin 1972:57; Peterson 1977:70).

Many species of catchfly and campion (*Silene*) are widespread and common in eastern North America. *S. stellata* often grows in wildflower gardens pollinated by butterflies and moths. Other species may be boiled and eaten like spinach. The fresh leaves are slightly bitter due to a harmless amount of the toxin saponin. Catchfly and campion (*Silene*) is found along roadsides and railroads, and in fields, meadows, thickets, gardens, open woods, and waste places (Muenscher 1987:209; Niering and Olmstead 1979:459-461; Peterson 1977:34).

Chickweed and starwort (*Stellaria*) are small, prostrate or erect weeds. *S. media* is an edible cosmopolitan weed that resembles spinach when boiled, and is a favorite food of chickens and wild birds. Chickweed/starwort (*Stellaria*) are common in rich woods, rocky slopes, waste places, cultivated ground, roadsides, gardens, lawns, and disturbed areas (Kirk 1975: 44; Medsger 1966:146; Niering and Olmstead 1979:461-462).

Many species of clover (*Trifolium*) have been introduced from Europe, although others are native to North America. Four-leaf clover (*T. repens*) is a familiar weed found in lawns. *T. pratense* is one of the most common perennial clovers and is planted as a hay and pasture crop. Clovers are high in protein and may be eaten raw, but are best when boiled, or soaked in salt water for several hours. A tea may be made by steeping dried flowers in hot water. Clovers are found in a variety of habitats including old fields, roadsides, prairies, dry woods, gardens, and lawns (Kirk 1975:100-101; Martin 1972:67; Niering and Olmstead 1979:540-542; Peterson 1977:56).

Results

Excavation Unit 10. The pollen and macrofloral records from Excavation Unit 10 represent the longest sequence of time. This time period includes basal deposits from the 1810s to 1820s, and continues until the 1840s. The upper layers are all attributable to the late twentieth century. Excavation Unit 10 is located adjacent to the west wing extension.

Megastratum VII represents the 1820s to 1830s (Table 8.1). Trees represented in the pollen record during this time period include hickory/pecan (*Carya*), chestnut (*Castanea*), walnut (*Juglans*), blackgum or tupelo (*Nyssa*), pine (*Pinus*), oak (*Quercus*), and basswood (*Tilia*) (Tables 8.2 and 8.3, Figure 8.2). Oaks appeared to have been the most abundant trees. Non-arboreal pollen represents plants that probably grew in the immediate vicinity of the front of this building. Low-spine Asteraceae pollen was abundant, suggesting that this area was highly disturbed and supported such plants as ragweed (*Ambrosia*), and perhaps cocklebur (*Xanthium*) or marsh elder (*Iva*). High-spine Asteraceae pollen was noted, but was not particularly abundant, indicating that other members of the daisy family were present either as weeds or possibly as cultivated flowers. The grass family (Poaceae) pollen was elevated in the lowest samples, suggesting a healthy population of grasses.

The macrofloral record from Excavation Unit 10 includes samples from the same megastrata as the pollen record. Samples from Park Building 48 represent the past approximately 170 years. Since many seeds may be assumed to survive for only approximately 100 years in the soil without unusually good conditions for preservation, recovery of uncharred seeds from the historic deposits at this site is expected to be sparse. Comparison of the variety and quantity of uncharred seeds recovered from the late twentieth century deposits with the variety and quantity of seeds recovered from the 1820s to 1840s occupation display exactly this pattern. Recovery of the few uncharred seeds obtained from the 1820s to 1840s deposits represents only a small fraction of the seeds deposited into these soils at the time of occupation. Charcoal was present in many of the flotation samples representing wood burned locally. Charcoal might be present through scattering or dumping ash from fireplaces or stoves, or as the result of scattering on the wind from chimneys or incinerators.

Flotation Samples 106 and 101 were taken from the lower layers of Megastratum VII (Layers I-3 and I-2) (Table 8.1). These samples exhibited both mulberry (*Morus*) and oak (*Quercus*) charcoal (Table 8.3), indicating that wood from these trees were burned. No seeds were recovered from either sample, either charred or uncharred. Sclerotia were also present. Sclerotia are also commonly called "carbon balls." These forms are mycorrhizae associations produced in the soil by the fungi *Cenococcum graniforme* (McWeeney 1989:227). They are the resting structures of the fungus, identified by Dr. Kristiina Vogt, Professor of Ecology in the School of Forestry and Environmental Studies at Yale University. Sclerotia are small, black, solid or hollow balls that rnage from 0.5 to 4 mm in size. Sclerotia appear to be ubiquitous and are found with coniferous and deciduous trees including fir *(Abies)*, common juniper *(Juniperus communis)*, larch (*Larix*), spruce *(Picea)*, pine *(Pinus)*, Douglas fir (*Pseudotsuga*), sycamore maple *(Acer pseudoplatanus)*, alder *(Aldnus)*, birch *(Betula)*, American hornbeam *(Carpinus caroliniana)*, hickory *(Carya)*, American chestnut *(Castanea dentata)*, hazelnut *(Corylus)*, hawthorn *(Crataegus monogyna)*, beech *(Fagus)*, poplar/cottonwood/aspen *(Populus)*, oak *(Quercus)*, alder bush *(Rhamnus fragula)*, willow *(Salix)*, chokecherry *(Sorbus)*, and linden *(Tilia)*

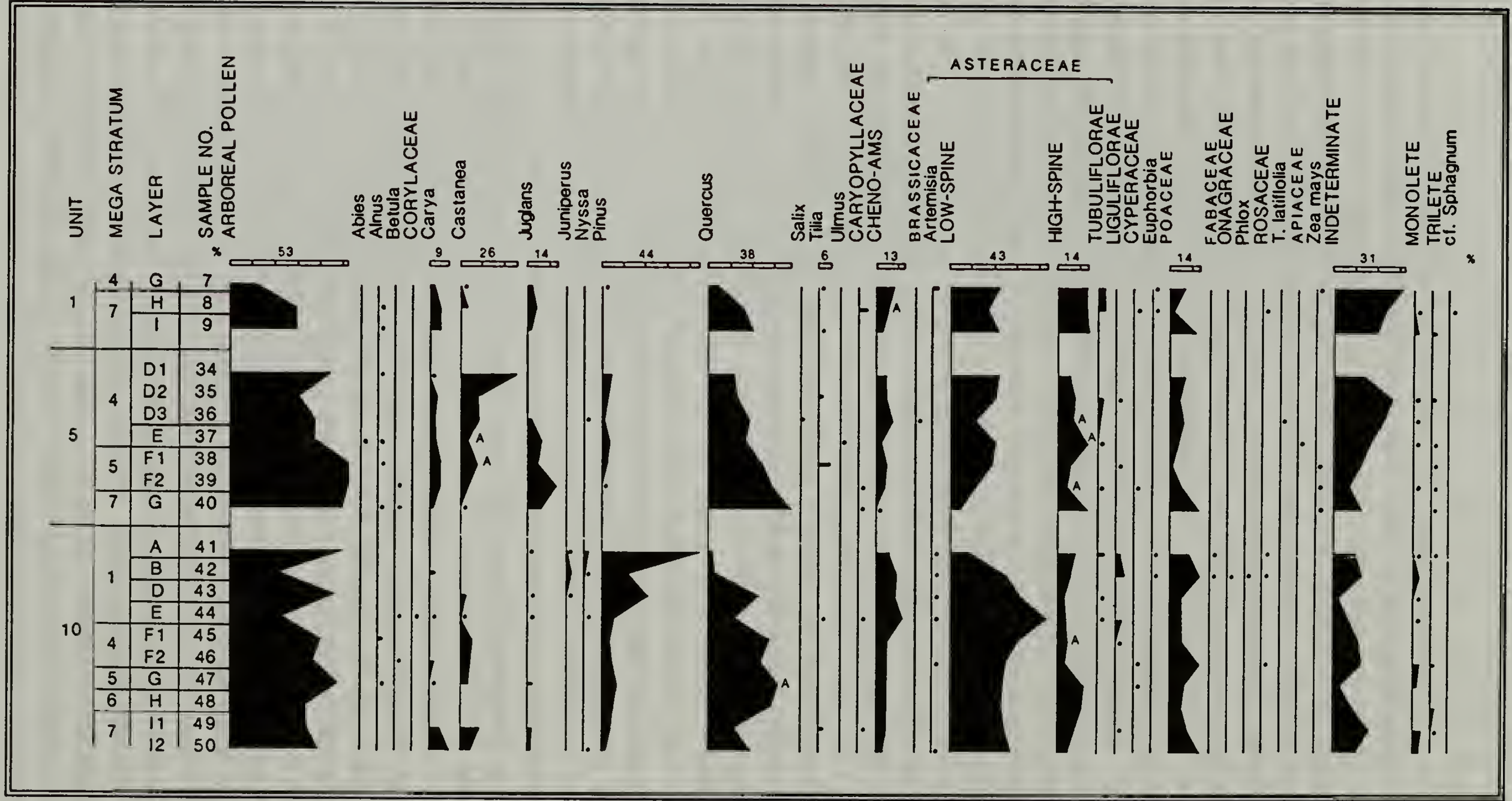

Figure 8.2. Pollen diagram from Park Building 48, Harpers Ferry National Historical Park.

(McWeeney 1989:229-230; Trappe 1962). Snail shells probably represent natural fauna, while eggshell, fish scales, and mollusk shell are probably present through discard of waste. Sample 99, from Layer 1-1, contained a larger variety of charcoal including hickory/pecan (*Carya*), ash (*Fraxinus*), mulberry (*Morus*), pine (*Pinus*), and oak (*Quercus*).

In each of the samples from Megastratum VII, oak (*Quercus*) was the dominant charcoal type, indicating that the occupants of this building were burning more of the locally abundant oak than other woods. The presence of a charred bedstraw and Cleaver's (*Galium*) seed suggests the possibility that this area might have been burned to remove weeds or that these plants were accidentally included with material burned in a fireplace or stove. The presence of a probable tomato (*Lycopersicon*) seed suggests that kitchen remains were probably discarded in this area, as do the presence of bone fragments, a piece of cloth, eggshell, fish scale, and mollusk shell fragments.

Megastratum VI represents the 1830s. During this time, oaks appear to have increased slightly. Few actual changes in vegetation can be documented in the pollen record. Megastratum VI is represented in the macrofloral record by Sample 95 from Layer H. The chickweed/starwort (*Stellaria*) seeds recovered indicate the presence of these plants as weeds in this area. The area continued to be used for discard of kitchen remains as exhibited by the presence of bone, eggshell, and fish scale fragments. Coal fragments were probably the result of the use of coal as fuel. It also is possible that pieces of coal were present in stove ashes that were discarded, or that small pieces of coal were present in the air and deposited ubiquitously across the town. Charcoal was again dominated by oak (*Quercus*), although hickory/pecan (*Carya*), pine (*Pinus*), and plum/cherry (*Prunus*) were also present.

The 1840s are represented by Megastrata IV and V. By this time, an increase in the variety of tree pollen was noted in Excavation Unit 10. New members of the arboreal pollen record include alder (*Alnus*) and birch (*Betula*), which commonly grow along the banks of rivers. High-spine Asteraceae pollen declined during the 1830s. Liguliflorae-type pollen was present only sporadically in samples from the 1820s to 1830s and the 1840s, indicating that in this area, dandelions were not an abundant weed. Cyperaceae pollen was noted in the 1840s, indicating that at least some of the sedges were present, probably as weeds in the lawn. Poeceae pollen peaked in the 1840s, suggesting that the grass population may have fluctuated in this area in front of Park Building 48. Rosaceae pollen was noted only in one sample from the 1840s, indicating the presence of either a domesticated or a wild member of the rose family. Low-spine Compositae pollen increased slightly in the 1840s, suggesting greater disturbance of this area and a greater population of ragweed.

Flotation Sample 92 represents Layer G within Megastratum V. This sample exhibited numerous remains that suggest discard of kitchen waste including bone, blue porcelain, eggshell, and fish scale fragments. Stonewort (*Chara*) oogonia were also noted. Stonewort is a submerged algae that is often found in still, nutrient-poor waters. It is possible that these conditions existed in front of Park Building 48 during its occupation in the form of a ditch or a wet low spot. It is also possible that stonewort (*Chara*) oogonia were present in fish gut which was subsequently discarded in this area as part of the kitchen waste. Charred goosegrass (*Eleusine*) seeds suggest that goosegrass might have been present in this area. Their charring may have resulted from the discard of hot ash from a stove. Charcoal recovered from this sample includes birch (*Betula*), hickory/pecan (*Carya*), walnut (*Juglans*), and oak (*Quercus*), which was dominant. Flotation Sample 90 represents Layer F-2 within Megastratum IV. Stonewort (*Chara*) oogonia were again present, possibly as a result of the discard of fish gut. Again, correlation is positive with the presence of fish scale fragments. In addition, bone fragments, eggshells, and mollusk shells suggest discard of kitchen debris in this area. Glass and white porcelain fragments suggest that general household and/or kitchen debris were discarded. Uncharred seeds that probably represent weeds in this area include goosefoot (*Chenopodium*), catchfly (*Silene*), and possibly nightshade family (Solanaceae). It is possible, however, that catchfly (*Silene*) and Solanaceae plants might have been included within a garden. Charcoal recovered from this sample includes maple (*Acer*), hickory/pecan (*Carya*), walnut (*Juglans*), osage orange (*Maclura*), pine (*Pinus*), and oak (*Quercus*), of which oak (*Quercus*) was dominant. The variety in the charcoal record suggests that the armory households living in Park Building 48 cut and utilized at least small quantities of a variety of local hardwoods.

Flotation Sample 88 represents Layer F-1 within Megastratum IV. There was less evidence for discard of kitchen debris in this sample than in previous samples. Only a single fish scale was recovered, and no stonewort (*Chara*) oogonia were noted. Small quantities of eggshell and glass were also observed. No bone was recorded. A single charred goosefoot (*Chenopodium*) seed was recovered, possibly through discard of hot ashes. The variety of uncharred seeds noted suggests a number of native or weedy plants grew in this area including mint family (Lamiaceae), carpetweed (*Mollugo*), wood sorrel (*Oxalis*), and catchfly (*Silene*). Tomatillo (*Physalis*) and raspberry group (*Rubus*) seeds might be present through discard of kitchen debris. Alternatively, ground cherry/tomatillo (*Physalis*) might have grown in this area. Recovery of charcoal in this sample was considerably less than other samples, also suggesting that discard of kitchen debris in this area had lessened by this time. Single fragments of pine (*Pinus*) and oak (*Quercus*) charcoal were recovered. Pine needle fragments were present, suggesting the possibility that pines grew relatively close to this area.

The twentieth-century pollen sample represented in Megastratum I exhibited considerable differences when compared with the earlier samples. Chestnut (*Castanea*) pollen declined between the 1840s and the late twentieth century, as did the pollen from many other trees. Diversity of trees is considerably less in the twentieth century than it was during the 1820s through the 1840s occupation. Pine (*Pinus*) pollen increased greatly in abundance in the late twentieth century, probably displacing many of the native hardwoods. Oak (*Quercus*) pollen was also noted to decline significantly during the late twentieth century.

Cheno-am pollen increased significantly during the late twentieth century, indicating significant disturbance and greater presence of these weedy annuals. Low-spine Asteraceae pollen peaked in the earliest sample from the late twentieth century (Sample 44, Layer E). The decline in Low-spine Asteraceae pollen probably reflects modern efforts to control weeds in this area. Liguliflorae-type composite pollen was more abundant in samples from the late twentieth century, indicating more of a problem with dandelions in the modern lawn than there was when Park Building 48 was occupied by armory households. Poaceae pollen fluctuated from its low levels observed in Layer D and E (Megastratum I) to a higher frequency recorded in Layer B (Megastratum I, Sample 42). Fluctuations in grasses within the lawn area are undoubtedly responsible for these fluctuations in pollen. The appearance of pollen representing several herbaceous plants such as spurge (*Euphorbia*), bean family (Leguminosae), evening primrose family (Onagraceae), and phlox (*Phlox*) are indicative of modern weedy plants and perhaps some intentionally planted plants. Rose family (Rosaceae) pollen was also recovered from late twentieth century samples.

The remaining five flotation samples from Excavation Unit 10 were from Megastratum I, representing the late twentieth century. The general trend in this record is one towards increasing complexity and variability as one approaches the present ground surface. This variability undoubtedly relates, at least in part, to the recent deposition of the seeds and the passage of relatively few years for seed deterioration. In Sample 86 (Layer E), catchfly/campion (*Silene*) seeds were recovered in great abundance, indicating that catchfly was a common weed in this area. Less common weeds include goosefoot (*Chenopodium*), carpetweed (*Mollugo*), and wood sorrel (*Oxalis*). Pine (*Pinus*) and oak (*Quercus*) charcoal indicate that pines and oaks continued to be used. In this sample, however, pine was the dominant charcoal type. This suggests that pines, now more numerous in the local forest, were burned more frequently. Small quantities of bone, fish scale, and glass were again recovered, although this is the first instance of amber-colored glass. In addition, a small lead ball was found.

Flotation sample 81 from Layer D exhibited a greater variety of uncharred seeds. Seeds present representing weeds are similar to those in Layer E, but also include St. Johnswort (*Hypericum*), a troublesome weed, and pokeweed (*Phytolacca*). The presence of a charred corn (*Zea mays*) kernel fragment and raspberry group (*Rubus*) seeds in this sample suggests that this area was once again used to dump kitchen debris.

Flotation sample 80 represents Layer C, also of the late twentieth century. Numerous carpetweed (*Mollugo*) seeds may suggest that carpetweed was an especially abundant weed. Other weedy plants were represented by goosefoot (*Chenopodium*), goosegrass (*Eleusine*), spurge (*Euphorbia*), probable St. Johnswort (*Hypericum*), wood sorrel (*Oxalis*), and dropseed (*Sporobolus*) seeds. Horehound (*Marrubium*), while having numerous medicinal uses, was probably present either as a weed or as part of a remnant population of plants that might have grown in this area during the 1800s. Pokeweed (*Phytolacca*) might also have been present as part of a remnant population if this area was ever used as a garden. It is also possible that discard of kitchen remains might have introduced pokeweed (*Phytolacca*) seeds into this area and promoted their subsequent growth as weeds.

Flotation sample 79 from Layer B contained large numbers of seeds representing plants that were probably present as weeds. Exceptions include strawberry (*Fragaria*), mint family (Lamiaceae), wood sorrel (*Oxalis*), tomatillo (*Physalis*), pokeweed (*Phytolacca*), raspberry group (*Rubus*), elderberry (*Sambucus*), nightshade family (Solanaceae), and grape (*Vitis*). These remains may be present through modern discard of food remains or growth of plants as a result of discard of historic food remains. Wood sorrel (*Oxalis*) may represent growth of a native plant common to woody areas. Recovery of charred rose family (Rosaceae) seed fragments and corn (*Zea mays*) kernels indicates the discard of relatively modern food remains. This is substantiated by the recovery of non-floral remains such as eggshell and fish scale. The charcoal record is typical of the assemblage of the twentieth century in that it was dominated by pine (*Pinus*) and not oak (*Quercus*). Other charcoal types present include maple (*Acer*), ash (*Fraxinus*), and mulberry (*Morus*).

Flotation sample 78 was collected from Layer A. The presence of fig (*Ficus*), strawberry (*Fragaria*), probable horehound (*Marrubium*), self-heal (*Prunella*), raspberry group (*Rubus*), and grape (*Vitis*) seeds suggests discard of kitchen debris. Recovery of eggshell substantiates this interpretation. A variety of weeds and plants typical of native or uncultivated vegetation in this area include pigweed/amaranth (*Amaranthus*), St. Peterswort (*Ascyrum*), goosefoot (*Chenopodium*), daisy family (Asteraceae), goosegrass (*Eleucine*), spurge (*Euphorbia*), bedstraw/Cleaver's (*Galium*), grass family (Poaceae), morning glory (*Ipomoea*), carpetweed (*Mollugo*), wood sorrel (*Oxalis*), smartweed/knotweed (*Polygonum*), purslane (*Portulaca*), buttercup (*Ranunculus*), catchfly (*Silene*), chickweed (*Stellaria*), and clover (*Trifolium*). This assemblage indicates the presence of a mixture of grasses, native plants, and introduced weeds. Uncharred monocot fragments were dominant in the wood category, while mulberry (*Morus*) was the dominant charcoal type. Maple (*Acer*), conifer, and pine charcoal were also present.

Excavation Unit 5. Excavation Unit 5 is located farthest from the front of Park Building 48. It is represented in the pollen and macrofloral records by samples collected from Megastrata IV, V, and VII. Pollen Sample 40 and flotation Sample 53 were the only samples from Megastratum VII, representing the occupation between the 1820s and 1830s. Pollen Sample 40 exhibited the largest frequency of oak (*Quercus*) pollen recovered, indicating that oak trees were abundant at this time. A small quantity of Low-spine Asteraceae pollen indicates that this area was probably kept well-weeded or did not suffer much intrusion from weeds. A large quantity of Poaceae pollen suggests that this area or a nearby area supported a dense population of grasses. Corn (*Zea mays*) pollen was recovered from this sample, suggesting that a garden was located in the area in front of Park Building 48, or that corn on the cob was cooked and the husks and silks or cooking water was discarded in this area. Flotation Sample 53, from Layer G, did not contain any identifiable seeds or charcoal.

Megastratum V represents the 1840s. Pollen Samples 38 and 39 both exhibited corn (*Zea mays*) pollen, indicating that the garden continued from the 1820s or 1830s into the 1840s. It is also possible that corn continued to be consumed and the remains discarded in this area. Oak (*Quercus*) pollen declined and Low-spine Asteraceae pollen increased, indicating a reduction in oak in the local forests and an increasing problem with disturbance and disturbance related weeds in this area. This area still does not appear to have been as weedy as those closer to Park Building 48. Walnut (*Juglans*) pollen was far more abundant in these samples from Excavation Unit 5 than it was in the other areas tested, suggesting that a walnut tree grew near the front of the building and closer to Excavation Unit 5 than to the other areas. Other arboreal pollen types were similar to those recovered from Excavation Unit 10. A spike of basswood (*Tilia*) pollen was noted in Sample 38, suggesting that a basswood tree also grew near the front of the building.

Flotation Sample 52, from Layer F-2 of Megastratum V, contained charred hickory nutshell *(Carya)*, as well as daisy family *(Asteraceae)* seeds. Charcoal was dominated by oak *(Quercus)*, which was typical for this era. Ash *(Fraxinus)* charcoal was also present. Recovery of charred *Carya* (hickory) nutshell indicates the presence of hickory nuts.

Flotation sample 49, representing Layer F-1 of Megastratum V, contained a greater variety of charcoal, again dominated by oak (*Quercus*), but also including ash (*Fraxinus*), mulberry (*Morus*), and pine (*Pinus*). Charred seeds include daisy family (Asteraceae), mustard family (Brassicaceae), and rose family (Rosaceae). Uncharred sedge family (Cyperaceae) seeds were also found. A small quantity of bone fragments were the only non-floral remains recovered that might indicate discard of kitchen debris. Near absence of remains that represent kitchen debris suggests that corn (*Zea mays*) pollen represents the presence of a garden rather than the discard of kitchen debris.

The 1840s are also represented by pollen and macrofloral samples collected from Megastratum IV. The upper portion of the pollen profile is represented by Samples 34, 35, 36, and 37. A continued decline in oak (*Quercus*) pollen was noted in these samples, and an increase in chestnut (*Castanea*) pollen was recorded. The garden was apparently discontinued during the 1840s, as no additional corn (*Zea mays*) pollen was found in the samples from Megastratum IV. During this time, Low-spine Asteraceae pollen increased, suggesting weed succession following discontinuance of the garden.

Megastratum IV is represented in the macrofloral record by 4 samples. Stonewort (*Chara*) oogonia was present is Sample 48, although no fish scales were recovered. One uncharred chickweed (*Stellaria*) seed was noted, as well as one bone fragment. Oak (*Quercus*) charcoal was dominant, and mulberry (*Morus*) and pine (*Pinus*) charcoal were also present. In Sample 47, raspberry (*Rubus*) and nightshades family (Solanaceae) seeds were recovered as well as bone and fish scale fragments. This assemblage better resembles kitchen debris. Charcoal includes oak (*Quercus*), which was dominant, as well as walnut (*Juglans*). Sample 46 contained catchfly (*Silene*) and nightshade family (Solanaceae) seeds, as well as blue porcelain and fish scale. Oak (*Quercus*) charcoal was again the dominant type, although uncharred pine (*Pinus*) wood was also present. Goosefoot (*Chenopodium*) and wood sorrel (*Oxalis*) seeds were recovered from Sample 44, suggesting that weeds or native plants grew in this area. Fish scale and bone are the only probable remnants of kitchen debris. Walnut (*Juglans*), pine (*Pinus*), and oak (*Quercus*) charcoal were present.

Excavation Unit 5, and some of the surrounding area, may have been used as garden. It is during Layers G and F-2, representing Megastrata VII and V respectively, that the pollen record notes corn (*Zea mays*) pollen, suggesting utilization of this area as a garden. Near absence of non-floral remains suggestive of kitchen debris in the macrofloral record supports the idea that this area probably functioned as a garden, and discard of non-floral kitchen debris was minimal. The presence of a variety of charcoal, as well as an increase in charred seeds, would suggest that ashes were added to the soil in this area. This may have been done to increase soil fertility, a practice common among gardeners. An increase in Low-spine Asteraceae pollen, a group that includes ragweed, in the late 1840s suggests that this area ceased to be used as a garden. It may have then become a weedy area where kitchen debris was discarded. An increase in remains suggestive of kitchen debris supports this.

Excavation Unit 1. Excavation Unit 1, located immediately inside of the west wing of Park Building 48, is represented by pollen and macrofloral samples from Megastrata VII and IV. Pollen samples 8 and 9 were collected from Megastratum VII, representing the 1820s to 1830s. A variety of tree pollen, similar to that observed in the other two units, was noted. These samples did, however, exhibit evidence of a large amount of ground disturbance and weeds, as Low-spine Asteraceae frequencies were moderately high. Sedge family (Cyperaceae) pollen was also recorded. Grass family (Poaceae) pollen fluctuated, indicating at least some grasses in this area. Rose family (Rosaceae) pollen was noted, suggesting that either domesticated or wild members of this family grew in the general vicinity. Caryophyllaceae pollen was noted to be distributed sporadically throughout the record. This family includes various cultivated flowers such as pinks, *Dianthus*, carnations, Sweet William, and bachelor buttons, as well as native plants.

Megastratum VII is also represented by four flotation samples. In Sample 9 from Layer H-4, oak (*Quercus*) and pine (*Pinus*) charcoal were recovered in equal quantities. Sclerotia were the only other remains noted. Layer H-3 (Sample 11) exhibited a few uncharred seeds including goosefoot (*Chenopodium*) and carpetweed (*Mollugo*), which probably represent weeds. Tomato (*Lycopersicon*) seeds may represent discard of kitchen trash or cultivation of tomatoes as a garden plant. Mulberry (*Morus*) and oak (*Quercus*) charcoal were also present.

Sample 10 from Layer H-2 contained carpetweed (*Mollugo*), purslane (*Portulaca*), and catchfly (*Silene*) seeds which probably represent weeds growing in this area. A single tomatillo (*Physalis*) seed may represent either weedy growth or discard of kitchen debris. Charcoal includes both oak (*Quercus*) and pine (*Pinus*), with oak (*Quercus*) being dominant as was typical of this age. No non-floral remains were recovered that would suggest discard of kitchen debris. Layer H-1 is represented by Sample 8 which contained stonewort (*Chara*) oogonia and fish scale. Fish scale, as well as eggshell and bone, suggest discard of kitchen debris. Recovery of carpetweed (*Mollugo*) seeds suggests that this weed also grew in the area. The elderberry (*Sambucus*) seed may be present through dumping of kitchen waste, or possibly through growth of this shrub near the area. Oak (*Quercus*) and maple (*Acer*) charcoal were both present, and oak (*Quercus*) was again dominant.

A decline in oak (*Quercus*) pollen was noted in pollen Sample 7, from Megastratum IV, representing the 1840s. This is consistent with the arboreal pollen record from Excavation Unit 5.

Megastratum IV is also represented by three macrofloral samples. In Sample 7 from Layer G-2, stonewort (*Chara*) oogonia were again present, although fish scales were absent. The presence of the stonewort (*Chara*) oogonia may indicate that fish guts were discarded in this area or that area supported low, wet places. Eggshell fragments also suggest that kitchen debris was discarded. Oak (*Quercus*) charcoal was dominant, with walnut (*Juglans*) and pine (*Pinus*) charcoal also present. Layer G-1 is represented by Samples 5 and 6. Stonewort (*Chara*) oogonia were noted in Sample 6, although fish scales were again absent. Bone fragments were also recovered, suggesting that small quantities of kitchen debris continued to be discarded in this area. Carpetweed (*Mollugo*) and clover (*Trifolium*) seeds probably indicate local growth of weeds. The nightshade family (Solanaceae) seeds may represent either growth of weedy members of this family or perhaps discard of edible members of this family. Charcoal, while dominated by oak (*Quercus*), also included pine (*Pinus*) and osage orange (*Maclura*). In Sample 5, variety in the seed record increases. Carpetweed (*Mollugo*) seeds became more common, as did goosefoot (*Chenopodium*) and purslane (*Portulaca*) seeds. Catchfly (*Silene*) seeds were also noted. These remains suggest that the area was becoming more weedy during the 1840s. Recovery of nightshade family (Solanaceae) and grape (*Vitus*) seeds, as well as charred corn (*Zea mays*) kernels, suggests discard of kitchen trash. This is supported by recovery of non-floral remains including bone, eggshell, and fish scale. Recovery of needle fragments indicates discard of other household debris. Recovery of square nails and construction debris suggests that other trash was also discarded in this area. Oak (*Quercus*) charcoal was again dominant, while pine (*Pinus*) and mulberry (*Morus*) were also noted.

SUMMARY AND CONCLUSIONS

Pollen and macrofloral samples were examined from three excavation units located in front of Park Building 48 at Harpers Ferry National Historical Park. Park Building 48 probably housed armory workers' households from the 1820s to the Civil War. Pollen and macrofloral samples represented conditions during the pre-Civil War occupation. Samples were also examined from Megastratum I, representing the twentieth century, at Excavation Unit 10 to provide modern controls. Conditions at Park Building 48 prior to modernization and industrialization of Harpers Ferry (1820s to 1830s) were similar to those seen at the old master armorer's house (Block B, Lot 3) during the same time period. The combined pollen and macrofloral records suggest that vegetation was more formal in front of Park Building 48 during the 1820s and 1830s than it was in later times.

In Excavation Unit 5, presence of corn (*Zea mays*) pollen in Megastrata VII and V suggest the presence of a garden in the 1810s and 1820s, probably persisting until the early 1840s. Absence of typical kitchen debris in the form of non-floral remains in the macrofloral samples from these same megastrata support this interpretation. A change in both the pollen and macrofloral records in Megastratum IV, representing the 1840s, suggests that this area was no longer used as a garden, but instead had become a weedy area that was used for discard of kitchen debris, and indicates deterioration of the landscape during the 1840s.

The combined pollen and macrofloral records for Excavation Unit 1, immediately next to Park Building 48, suggest that kitchen debris and weeds were common in this area. It is also possible that at least a few flowers were planted in this area. It is probable that this area closest to the building would also have been impacted by water from the drip line of the building, which would tend to create a disturbance of the ground and encourage growth of weeds.

Excavation Unit 10, adjacent to Park Building 48's eastwing was apparently a grassy and weedy area that was also used for occasional discard of kitchen debris. There is less evidence of weeds noted in the Excavation Unit 10 samples from the 1820s and 1830s than there is in the 1840s. This trend may suggest that the area was indeed weedier in the 1840s than it was earlier, indicating deterioration of the landscape during the 1840s, coinciding with increased industrialization.

A few observations concerning diet may be made from the combined pollen and macrofloral records, although evidence from these yard samples is certainly not as complete as would be evidence from privy samples. The pre-Civil War armory workers living in Park Building 48 appear to have grown their own corn in a garden in the side yard. The garden appears relatively well tended, as weedy pollen peaks after apparent abandon of the garden, not during its use. Discarded kitchen debris suggests that the occupants consumed fish that may have been caught in the nearby Shenandoah River, as well as vegetables and fruit. These include tomato (*Lycopersicon*), raspberry (*Rubus*), elderberry (*Sambucus*), grape (*Vitis*), fig (*Ficus*), and strawberry (*Fragaria*). The occupants also had at their disposal a variety of plants with medicinal properties that included members of the mint (Lamiaceae) family, such as horehound (*Marrubium*) and heal-all/self-heal (*Prunella*), elderberry (*Sambucus*), pokeweed (*Phytolacca*), grape (*Vitis*), and spurge (*Euphorbia*). Bedstraw/Cleaver's (*Galium*) is noted to have been used as both a medicinal plant and to stuff mattresses. It is also a common native plant. Seeds may have been recovered through direct use of this plant or through its presence in the native vegetation. Pokeweed (*Phytolacca*) may also have been grown in a garden area, or might have been present as part of the natural weedy vegetation. Although they are edible, plants such as wood sorrel (*Oxalis*), smartweed (*Polygonum*), purslane (*Portulaca*), catchfly (*Silene*), chickweed (*Stellaria*), and clover (*Trifolium*) were probably present as local weedy plants.

The pollen documents more diversity in the hardwood forest near Harpers Ferry during the 1820s and 1830s than there is today. Oak (*Quercus*) was clearly dominant at that time, although there has been a decrease in oaks and pines have increased. A change of tree dominance in the charcoal record was also noted. Oak was clearly dominant in the 1820s to 1840s, while pine became more dominant in the twentieth century. Diversity of charcoal also declined through time, representing reduction in diversity of hardwoods in the local forest in the vicinity of Harpers Ferry, which is also reflected in the pollen record.

Table 8.1. Provenience data for pollen samples from Park Building 48.

Bag No.	Unit No.	Layer	Megastratum	Megastrata Chronology	Pollen Counted
7	1	G	IV	1840s	100
9	1	H	VII	1820s through 1830s	100
9	1	I	VII	1820s through 1830s	100
34	5	D-1	IV	1840s	100
35	5	D-2	IV	1840s	100
36	5	D-3	IV	1840s	100
37	5	E	IV	1840s	100
36	5	F-1	I	1840s	100
39	5	F-2	V	1840s	200
40	5	G	VII	1820s through 1830s	100
44	10	A	I	Late twentieth century	100
42	10	B	I	Late twentieth century	100
48	10	D	I	Late twentieth century	200
44	10	E	I	Late twentieth century	200
48	10	F-1	IV	1830s	100
46	10	F-2	IV	1840s	100
47	10	G	V	1840s	100
48	10	H	VI	1830s	100
49	10	I-1	VII	1820s through 1830s	100
50	10	I-2	VII	1820s through 1830s	100

Table 8.2. Pollen types observed in samples from Park Building 48.

Scientific Name	Common Name
ARBOREAL POLLEN:	
Abies	Fir
Alnus	Alder
Betula	Birch
Corylaceae	Hazel family
Carya	Hickory, Pecan
Castancea	Chestnut
Juglans	Walnut
Juniperus	Juniper
Nyssa	Tupelo
Pinus	Pine
Quercus	Oak
Salix	Willow
Tilia	Basswood
Ulmus	Elm
NON-ARBOREAL POLLEN:	
Caryophyllaceae	Pink family
Cheno-ams	Includes amaranth and pigweed family
Sarcobatus	Greasewood
Asteraceae:	Sunflower family
Artemisia	Sagebrush
Low-spine	Includes ragweed, cocklebur, etc.
High-spine	Includes aster, rabbitbrush, snakeweed, sunflower, etc.
Tubuliflorae	Includes eroded Low- and High- spine
Liguliflorae	Includes dandelion and chicory
Brassicaceae	Mustarb family
Cyperaceae	Sedge family
Euphorbia	Spurge
Poaceae	Grass family
Fabaceae	Legume or pea family
Linaceae	Flax family
Onagraceae	Evening primrose family
Phlox	Phlox
Rosaceae	Rose family
Typha latifolia	Cattail
Apiaceae	Parsley/carrot family
Zea mays	Maize, corn
Indeterminate	
SPORES:	
Monolete	
Trilete	
cf. *Sphagnum*	Sphagnum

Table 8.3. Provenience data for macrofloral samples from Park Building 48.

Bag No.	Unit No.	Layer	Megastratum	Megastrata Chronology
3	1	G-1	IV	1840s
6	1	G-1	IV	1840s
7	1	G-2	IV	1840s
8	1	H-1	VII	1820s through 1830s
80	1	H-2	VII	1820s through 1830s
43	1	H-3	VII	1820s through 1830s
8	1	H-4	VII	1820s through 1830s
44	5	D-1	IV	1840s
43	5	D-2	IV	1840s
48	5	D-3	IV	1840s
48	5	E	IV	1840s
48	5	F-1	V	1840s
92	5	F-2	V	1840s
53	5	G	VII	1820s through 1830s
98	10	A	I	Late twentieth century
80	10	E	I	Late twentieth century
80	10	G	I	Late twentieth century
80	10	D	I	Late twentieth century
80	10	E	I	Late twentieth century
88	10	F-1	IV	1840s
90	10	F-2	IV	1840s
92	10	G	V	1840s
95	10	H	VI	1840s
90	10	I-1	VII	1820s through 1830s
101	10	I-2	VII	1820s through 1830s
106	10	I-3	VII	1820s through 1830s

Table 8.4. Macrofloral remains recovered in samples from Park Building 48.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
106	Charcoal:					
Megastratum VII	cf.*Morus* (Mulberry)	Present		1		
	Quercus (Oak)	Present		3		
1820s-1830s	Non-floral Remains:					
	Sclerotia		50			
	Snail				2	
101	Charcoal:					
Megastratum VII	*Morus* (Mulberry)	Present		1		
	Quercus (Oak)	Moderate		4		
1820s-1830s	Non-floral Remains:					
	Bone					3
	Sclerotia		30			
	Eggshell					10
	Fish scale					15
	Mollusc shell					1
	Snail shell				12	X
99	Floral Remains:					
Megastratum VII	cf. *Galium* (Bedstraw, Cleaver's)	Seed	1			
	Solanaceae cf.*Lycopersicon* (Tomato)	Seed				2
1820s-1830s	Charcoal/Wood:					
	Carya (Hickory, Pecan)	Present		2		
	Fraxinus (Ash)	Present		1		
	Morus (Mulberry)	Present		3		
	Pinus (Pine)	Present		1		1
	Quercus (Oak)	Dominant		8		
	Non-floral Remains:					
	Bone					
	Sclerotia		14		1	47
	Claw					
	Eggshell					19
	Fish scale					31
	Mollusc shell				9	1
	Snail					5

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
95 Megastratum VI 1830s	Floral Remains:					
	Stellaria (Chickweed, Starwort)	Seed			2	
	Charcoal:					
	Carya (Hickory, Pecan)	Present		2		
	Pinus (Pine)	Present		3		
	Prunus (Plum/Cherry)	Present		1		
	Quercus (Oak)	Dominant		9		
	Non-floral Remains:					
	Bone					12
	Sclerotia		13			
	Coal					X
	Eggshell					9
	Fish scale					5
	Snail				16	X
92 Megastratum V 1840s	Floral Remains:					
	Chara (Stonewort [algae])	Oogonia			X	X
	Eleusine (Goosegrass)	Seed	1			
	Charcoal:					
	cf. *Betula* (Birch)	Present		1		
	Carya (Hickory, Pecan)	Moderate		4		
	Juglans (Walnut)	Present		1		
	Quercus (Oak)	Dominant		14		
	Non-floral Remains:					
	Bone					14
	Sclerotia		64			
	Coal					X
	cf. Delft blue porcelain					1
	Eggshell					31
	Fish scale					12
	Glass, clear					1
	Insect fragments					5
	Snail				45	X
90 Megastratum IV 1840s	Floral Remains:					
	Chara (Stonewort [algae])	Oogonia			X	X
	Chenopodium (Goosefoot)	Seed			1	
	Silene (Catchfly, Campion)	Seed			1	1
	Solanaceae (Nightshade family)	Seed				2

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
(90)	Charcoal:					
	Acer (Maple, Box Elder)	Present		1		
	Carya (Hickory, Pecan)	Present		2		
	Juglans (Walnut)	Present		2		
	Maclura (Osage Orange)	Present		1		
	Pinus (Pine)	Present		2		
	Quercus (Oak)	Dominant		11		
	Non-floral Remains:					
	Bone					9
	Sclerotia		80			
	Coal					X
	Eggshell					25
	Fish scale					14
	Glass, clear					1
	Mollusc shell					5
	White porcelain					1
	Snail				52	X
88	Floral Remains:					
	Chenopodium (Goosefoot)	Seed	1			
	Lamiaceae (Mint Family)	Seed			3	
	Mollugo (Carpet Weed)	Seed			1	
	Oxalis (Wood Sorrel)	Seed			4	
	Physalis (Groundcherry, Tomatillo)	Seed			1	
	Rubus (Raspberry, Blackberry)	Seed			1	
	Silene (Catchfly, Campion)	Seed			4	5
	Pinus (Pine)	Needles				X
	Charcoal:					
	Pinus (Pine)	Present		1		
	Quercus (Oak)	Present		1		
	Non-floral Remains:					
	Sclerotia		15			
	Coal					X
	Eggshell					1
	Fish scale					1
	Glass, amber-colored					1
	Glass, clear				1	1
	Insect				99	3
	Snail					X

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
86	Floral Remains:					
Megastratum I	*Chenopodium* (Goosefoot)	Seed			13	3
	Mollugo (Carpetweed)	Seed			1	
Late Twentieth-Century	*Oxalis* (Wood Sorrel)	Seed			4	67
	Silene (Catchfly, Campion)	Seed			125	
	Unidentifiable	Seed			1	
	Charcoal/Wood:					
	Pinus (Pine)	Dominant		6		2
	Quercus (Oak)	Present	2			
	Non-floral Remains:					
	Bone					5
	Sclerotia		13			X
	Coal					1
	Fish scale				1	5
	Glass, amber-colored					6
	Glass, clear				1	
	Lead ball				278	X
	Snail					
81	Floral Remains:					
Megastratum I	*Chenopodium* (Goosefoot)	Seed			3	
	cf. *Hypericum* (St. Johnswort, Kalamath)	Seed			1	
Late Twentieth-Century	*Mollugo* (Carpetweed)	Seed			8	
	Phytolacca (Pokeweed)	Seed				3
	Rubus (Raspberry, Blackberry)	Seed			1	
	Silene (Catchfly, Campion)	Seed			2	
	Zea mays (Maize, Corn)	Kernel		1		
	Unidentifiable	Seed	2			
	Charcoal/Wood:					
	Pinus (Pine)	Dominant		1		9
	Quercus (Oak)	Present		1		
	Non-floral Remains:					
	Bone					2
	Sclerotia		24			
	Coal					X
	Glass, clear					6
	Insect fragments					14
	Snail				63	X

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
80	Floral Remains:					
Megastratum I	*Chenopodium* (Goosefoot)	Seed			3	1
	Eleusine (Goosegrass)	Seed			1	
Late Twentieth-Century	*Euphorbia* (Spurge)	Seed			1	
	cf. *Hypericum* (St. Johnswort, Kalamath)	Seed			1	
	Lamiaceae cf. *Marrubium* (Horehound)	Seed			1	
	Mollugo (Carpetweed)	Seed			76	
	Oxalis (Wood Sorrel)	Seed			1	1
	Phytolacca (Pokeweed)	Seed			1	2
	Sporobolus (Dropseed)	Seed			3	
	Unidentifiable	Seed	1			
	Charcoal/Wood:					
	Pinus (Pine)	Moderate		2		4
	Quercus (Oak)	Present		2		
	Non-floral Remains:					
	Bone					2
	Sclerotia		23			
	Coal					X
	Glass, amber-colored					3
	Glass, clear				3	
	Insect fragments					3
	Snail				3	X
79	Floral Remains:					
Megastratum I						
	Amaranthus (Pigweed)	Seed			5	
Late Twentieth-Century	*Chenopodium* (Goosefoot)	Seed			12	
	Cyperaceae (Sedge Family)	Seed			1	1
	cf. *Euphorbia* (Spurge)	Seed			1	
	Fragaria (Strawberry)	Seed			2	
	Hypericum (St. Johnswort, Kalamath)	Seed			1	
	Lamiaceae (Mint family)	Seed			4	
	Mollugo (Carpetweed)	Seed			7	
	Oxalis (Wood Sorrel)	Seed			14	3
	Physalis (Groundcherry, tomatillo)	Seed			3	
	Phytolacca (Pokeweed)	Seed			4	2
	Portulaca (Pursane)	Seed			2	
	cf. Rosaceae (Rose family)	Seed				
	Rubus (Raspberry, Blackberry)	Seed			23	4
	Sambucus (Elderberry)	Seed	2		1	
	Silene (Catchfly, Campion)	Seed			3	
	Solanaceae (Nightshade family)	Seed			2	2
	cf. *Stellaria* (Chickweed, Starwort)	Seed				
	Vitis (Grape)	Seed	2			2

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
(79)	Floral Remains continued:					
	Zea mays (Maize, Corn)	Kernel	1			
	Unidentifiable	Seed	1			
	Charcoal/Wood:					
	Acer (Maple, Box Elder)	Moderate		4		
	cf. *Fraxinus* (Ash)	Present		2		
	cf. *Morus* (Mulberry)	Present		1		
	Pinus (Pine)	Dominant		5		4
	Quercus (Oak)	Present		1		
	Non-floral Remains:					
	Sclerotia		26			
	Coal					X
	Eggshell					4
	Fish scale					2
	Glass, clear					1
	Insect fragments					22
	Sheet metal					X
	Snail				71	145
78 Megastratum I Late Twentieth-Century	Floral Remains:					
	Amaranthus (Pigweed)	Seed			1	
	cf. *Ascyrum* (St. Peterwort, St. Andrews Cross)	Seed			1	
	Chenopodium (Goosefoot)	Seed			7	
	Asteraceae (Daisy or Sunflower family)	Seed			2	
	Eleusine (Goosegrass)	Seed			5	
	Euphorbia (Spurge)	Seed			1	
	Ficus (Fig)	Seed			1	
	Fragaria (Strawberry)	Seed			2	
	Galium (Bedstraw, Cleaver's)	Seed			2	
	Poaceae (Grass family)	Seed			1	
	cf. *Ipomoea* (Morning Glory)	Seed			1	
	Lamiaceae (Mint family)	Seed			2	
	Lamiaceae cf. *Marrubium* (Horehound)	Seed			5	
	Prunella ((Heal-all, Self Heal)	Seed			1	
	Mollugo (Carpetweed)	Seed			55	
	Oxalis (Wood Sorrel)	Seed			2	
	Physalis (Groundcherry, Tomatillo)	Seed			3	
	Polygonum (Smartweed, Knotweed)	Seed			6	
	Portulaca (Purslane)	Seed			3	
	cf. *Ranunculus* (Buttercup)	Seed			3	
	Rubus (Raspberry, Blackberry)	Seed			13	4
	Silene (Catchfly, Campion)	Seed			1	
	Stellaria (Chickweed, Starwort)	Seed			12	3

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
(78)	Floral Remains continued:					
	Trifolium (Clover)	Seed			1	
	Vitis (Grape)	Seed				3
	Unidentifiable	Seed				1
	Unidentified	Fruit with seed				1
	Charcoal/Wood:					
	Conifer	Present		1		
	Acer (Maple, Box Elder)	Present		3		
	Monocot	Dominant				6
	cf. *Morus* (Mulberry)	Moderate		4		
	Pinus ((Pine)	Present				1
	Non-floral Remains:					
	Sclerotia		1			
	Coal					X
	Eggshell					2
	Glass, clear					1
	Insect fragments					32
	Sheet metal					3
	Snail					12
53 Megastratum VII 1820s-1830s	Floral Remains:					
	Unidentifiable	cf. Fruit				1
	Non-floral Remains:					
	Sclerotia		10			
	Insect fragments					2
52 Megastratum V 1840s	Floral Remains:					
	Carya (Hickory, Pecan)	Nutshell		1		
	Asteraceae (Daisy or Sunflower family)	Seed	1			
	Unidentified	Fruit	1			
	Unidentifiable	Seed	1			
	Charcoal:					
	Fraxinus (Ash)	Present		1		
	Quercus (Oak)	Dominant		15		
	Non-Floral Remains:		51			
						3
	Sclerotia				1	
	Insect fragments					
	Snail					

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
49	Floral Remains:					
Megastratum V	Asteraceae (Daisy or Sunflower family)	Seed	1			
	Brassicaceae (Mustard family)	Seed	2			
1840s	Cyperaceae (Sedge family)	Seed			1	
	cf. Rosaceae (Rose family)	Seed	1			
	Unidentifiable	Seed	1	2		
	Unidentifiable	cf. Fruit		1		
	Charcoal:					
	Fraxinus (Ash)	Present		3		
	Morus (Mulberry)	Present		1		
	Pinus (Pine)	Present		2		
	Quercus (Oak)	Moderate		5		
	Non-floral Remains:					
	Bone				1	1
	Sclerotia		160			
	Insect fragments					19
	Snail				5	
48	Floral Remains:					
Megastratum IV	*Chara* (Stonewort)	Oogonia			X	X
	Stellaria (Chickweed, Starwort)	Seed			1	
1840s	Charcoal:					
	Morus (Mulberry)	Present		3		
	Pinus (Pine)	Present		1		
	Quercus (Oak)	Dominant		6		
	Non-floral Remains:					
	Bone					1
	Coal		32			
	Insect fragments					X
	Snail				3	4
47	Floral Remains:					
Megastratum IV 1850s	*Rubus* (Raspberry, Blackberry)	Seed				1
	Solanaceae (Nightshade family)	Seed				1
	Charcoal:					
	Juglans (Walnut)	Present		1		
	Quercus (Oak)	Dominant		21		

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
(47)	Non-floral Remains:					
	Bone					5
	Sclerotia		71			
	Coal					X
	Fish scale					1
	Insect fragments				6	
	Snail					
46	Floral Remains:					
Megastratum IV	cf. *Silene* (Catchfly, Campion)	Seed		2		
	Solanaceae (Nightshade family)	Seed				5
1840s	Unidentifiable	cf. Fruit			1	
	Charcoal/Wood:					
	Pinus (Pine)	Present				1
	Quercus (Oak)	Moderate		5		
	Non-floral Remains:					
	Bone					10
	Sclerotia		183			
	Coal					X
	Delft blue porcelain					1
	Fish scale					2
	Insect fragments					3
	Snail				31	X
44	Floral Remains:					
Megastratum IV	*Chenopodium* (Goosefoot)	Seed			3	
	Oxalis (Wood Sorrel)	Seed			2	
1840s	Charcoal/Wood:					
	Juglans (Walnut)	Present		1		
	Pinus (Pine)	Present		1		1
	Quercus (Oak)	Present		1		
	Non-floral Remains:					
	Bone					2
	Sclerotia		30			
	Coal					X
	Fish scale					1
	Insect fragments					11
	Snail					X

Table 8.4. continued.

Bag No.	Identification	Part	Charred W	Charred F	Uncharred W	Uncharred F
9 Megastratum VII 1820s-1830s	Charcoal:					
	Pinus (Pine)	Present		2		
	Quercus (Oak)	Present		2		
	Non-floral Remains:					
	Sclerotia		130			
11 Megastratum VII 1820s-1830s	Floral Remains:					
	Chenopodium (Goosefoot)	Seed			1	
	cf. *Lycopersicon* (Tomato)	Seed				1
	Mollugo (Carpetweed)	Seed			1	
	Charcoal/Wood:					
	Monocot	Present				2
	Morus (Mulberry)	Present		1		
	Quercus (Oak)	Present		2		
	Non-floral Remains:					
	Sclerotia		91			
	Snail					7
10 Megastratum VII 1820s-1830s	Floral Remains:					
	Mollugo (Carpetweed)	Seed				3
	Physalis (Groundcherry, Tomatillo)	Seed				1
	Portulaca (Purslane)	Seed				1
	Silene (Catchfly, Campion)	Seed				2
	Charcoal:					
	Pinus (Pine)	Present		1		
	Quercus (Oak)	Dominant		6		
	Non-floral Remains:					
	Sclerotia		69			
	Coal					X
	Snail				1	
8 Megastratum VII 1820s-1830s	Floral Remains:					
	Chara (Stonewort [algae])	Oogonia			X	X
	Mollugo (Carpetweed)	Seed			1	
	Sambucus (Elderberry)	Seed			1	
	Unidentifiable	Seed	1			

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
(8)	Charcoal:					
	Acer (Maple, Box Elder)	Present		1		
	Quercus (Oak)	Dominant		5		
	Non-floral Remains:					
	Bone					1
	Sclerotia		28			1
	Eggshell				3	
	Fish scale					5
	Snail				13	X
7 Megastratum IV 1840s	Floral Remains:					
	Chara (Stonewort [algae])	Oogonia			X	X
	Charcoal:					
	Juglans (Walnut)	Present		3		
	Pinus (Pine)	Present		2		
	Quercus (Oak)	Moderate		4		
	Non-floral Remains:					
	Sclerotia		39			
	Eggshell					2
	Snail				26	X
6 Megastratum IV 1840s	Floral Remains:					
	Chara (Stonewort [algae])	Oogonia			X	X
	Mollugo (Carpetweed)	Seed			1	
	Solanaceae (Nightshade)	Seed			3	1
	Trifolium (Clover)	Seed			1	
	Charcoal:					
	Maclura (Osage orange)	Present		1		
	Pinus (Pine)	Present		2		
	Quercus (Oak)	Dominant		9		
	Non-floral Remains:					
	Bone					2
	Sclerotia		39			
	Coal					X
	Snail				15	X

Table 8.4. continued.

Bag No.	Identification	Part	Charred		Uncharred	
			W	F	W	F
5	Floral Remains:					
Megastratum IV	*Chenopodium* (Goosefoot)	Seed			4	
	Mollugo (Carpetweed)	Seed			10	
1840s	*Oxalis* (Wood sorrel)	Seed			1	
	Portulaca (Purslane)	Seed			4	
	Silene (Catchfly, Campion)	Seed			1	
	Solanaceae (Nightshade family)	Seed			2	2
	Vitis (Grape)	Seed				1
	cf. *Zea mays* (Maize, Corn)	Kernel	2			
	Charcoal/Wood:					
	cf. *Morus* (Mulberry)	Present		1		
	Pinus (Pine)	Sub-Dom.		6		1
	Quercus (Oak)	Dominant		9		
	Non-floral Remains:					
	Bone					3
	Sclerotia		41			
	Coal					X
	Eggshell					X
	Fish scale					3
	Needle					2
	Snail				72	X
	Square nail					1
	Construction debris					X

W = Whole
F = Fragment

CHAPTER 9

PHYTOLITH ANALYSIS OF SELECTED SOIL SAMPLES FROM PARK BUILDING 48, HARPERS FERRY, WEST VIRGINIA

Irwin Rovner

ABSTRACT

Phytolith analysis was conducted on soil samples associated with Park Building 48, a nineteenth-century dwelling at Harpers Ferry, West Virginia. Phytoliths were generally frequent and well-preserved, but those of known taxonomic assignment, e.g. grass short cells, varied considerably in frequency among the samples. Substantial and significant differences were apparent among the phytolith populations. Samples dating prior to 1840 (from ca. 1820 through 1840) varied from impoverished to a "basic" Harpers Ferry background profile favoring large (grass?) cell phytoliths with characteristic grass short cells rare to absent. No evidence was derived to suggest that this structure was subjected to any community policy of landscaping or beautification. Significant departure occurs during the 1840s probably representing a very brief period of vegetable, specifically maize (and flower?), gardening in the east side yard. Abandonment of the garden before the end of the decade resulted in a return to a pre-1840 configuration - impoverishment or the background profile. The early twentieth-century samples show a largely impoverished profile with the notable exception of the most recent sample which shows results of National Park Service landscaping.

INTRODUCTION

Phytolith analysis was conducted to reconstruct the floral history of the landscape associated with Park Building 48, a dwelling constructed between 1821 and 1832. It was used as a residence by a sequence of armory workers through the nineteenth century. An addition constructed in 1844 created a duplex residential unit (Bumgardner 1991). Phytolith extraction was conducted on selected soil samples collected from Excavation Units 1, 5 and 10 associated with a residence (see Figure 9.1). Phytolith analysis was employed to enhance knowledge of associated flora, patterns of landscaping and land use; i.e., formal or informal gardens, lawns, untended and/or disturbed areas, waste disposal and deposition, etc.

Samples from Excavation Unit 1, directly adjoining the original structure, pre-dates construction of the 1844 east wing. Excavation Unit 10, located in front of the east wing, received domestic trash deposits from the early nineteenth century. Excavation Unit 5 is located in the yard area to the east of the structure and provided evidence of deliberate gardening during the early 1840s.

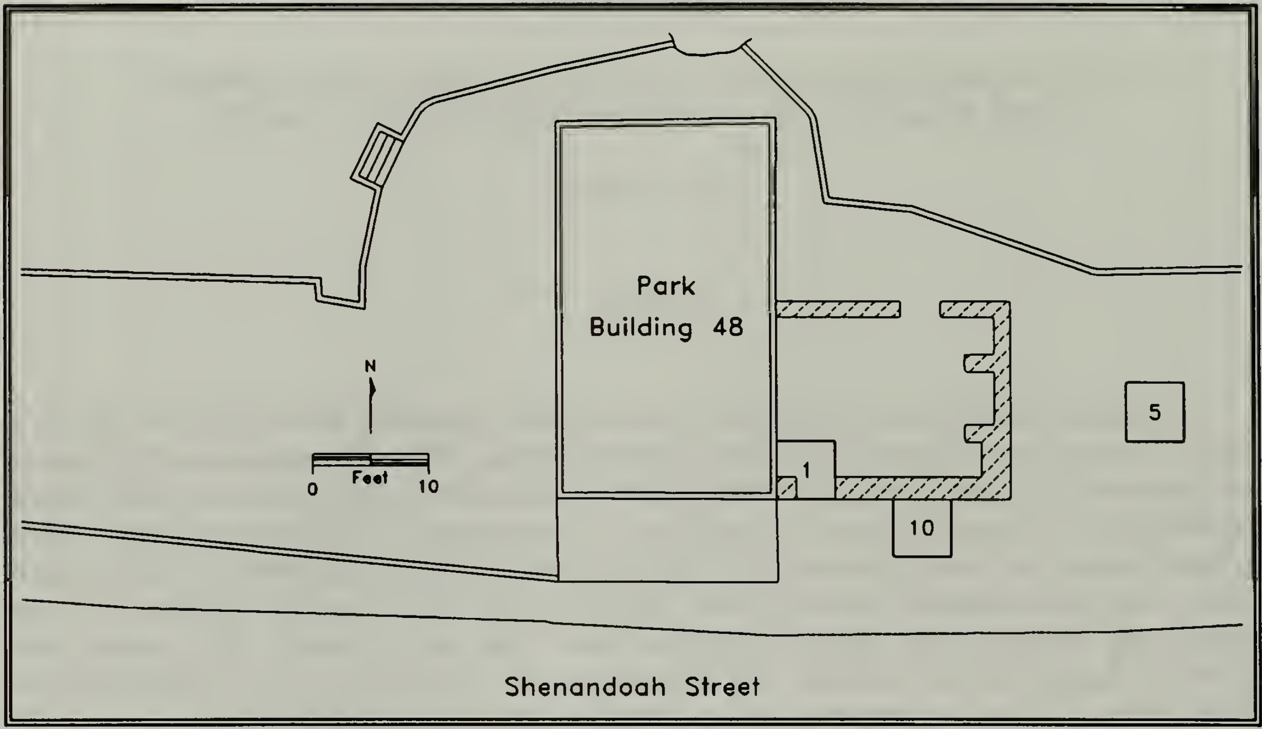

Figure 9.1. Plan of Park Building 48 showing location of Excavation Units 1, 5, and 10 for phytolith sampling.

METHODS

No phytolith reference database, developed from phytolith extracts of living plants in the Harpers Ferry region, was available or specifically prepared for this study. This severely limits taxonomic specificity in interpreting phytoliths present and, predictably, leaves a substantial number of morphologically distinctive (and sometimes frequent) phytolith types in the category of "unknown". However, recent publications (Rapp and Mulholland 1992) continue substantial verification for both general and specific taxonomic assignments of phytoliths in the Harpers Ferry assemblages.

Analysis conducted included: 1) phytolith extraction from soil samples; 2) microscope scanning of extracted phytolith assemblages for identification, recording and image storage on videotape; and 3) compilation and interpretation of data. Videotape images are available and subjected to automated digitization and morphometric analysis (i.e. size and shape measurements) of phytolith images in conjunction with development of a phytolith reference database for the region.

Phase 1: Phytolith extraction from soil.

Conventional soil extraction procedures for all soil samples were initially used with modifications employed as required by the nature of specific samples. Standard procedures generally followed that found in Rovner (1971, 1983). The soil was initially "cleaned" to promote disaggregation of all particles -- inorganic, organic and biolithic -- as follows:

1. About 20 ml volume of soil placed into clean beaker.

2. Distilled water added, stirred, and let settle for a minimum of 4 hours. Piperno (1988) suggests one hour is sufficient for tropical soils. The additional time provided here was an arbitrary caution procedure given possible factors of soil differences.

3. The aliquot with suspended fine particles and very light fraction material, e.g. floating rootlets, fibers, charcoal, etc., was decanted and discarded.

4. The soil was resuspended in distilled water to which a deflocculant (i.e. Calgon) was added to suspend very fine silt particles. After settling overnight, the aliquot with suspended fine particles was decanted and discarded.

Smears on glass slides were taken periodically and scanned under the microscope to ensure no loss of bioliths. Step 4 was repeated as necessary until aliquot was clean. The soil from Harpers Ferry required more repeated treatments than expected compared to soils from other ecological zones and regions of North America.

5. Prior experience with Harpers Ferry soils and tests on this set confirmed extremely vigorous reaction to hydrogen peroxide (30%) treatment to eliminate organic matter. Soil was treated with Schulze Solution (Rovner 1972), commonly used to digest organic plant tissue in extracting reference phytolith assemblages.

6. Following oxidation by Schulze, soil samples were rinsed 2-3 times with distilled water, stirred, settled or centrifuged and decanted.

7. Dilute HCl (20 ml) was added to each sample to remove carbonates. Reaction was variously weak, or most often, absent. Repeats were not necessary. Samples were allowed to settle, the aliquot decanted and discarded.

8. Each sample was rinsed 3 times with distilled water.

9. Soil was placed in a drying oven set at 98°C.

10. Heavy liquid for flotation separation was prepared by dissolving zinc bromide powder in slightly acidified distilled water until a specific gravity between 2.3 and 2.4 was achieved. This was easily determined using commercially-made calibrated specific gravity sink floats.

11. A 5 ml volume of dry soil was added to heavy liquid in a bent ½in. clear tygon tube which was squeezed gently to "wet" the soil. The bent tube was inserted into a (lightly greased) centrifuge shell and centrifuged at moderate speed for 30 minutes to float phytoliths.

12. After centrifugation, clamps were placed on both vertical arms of the bent tube just below the flotant surface in the tube. Using a wash bottle stream of water the flotant was rinsed from the tygon tube into a 50 ml centrifuge tube.

13. Distilled water was added to the centrifuge tube to about 40 ml level. Centrifugation precipitated the phytoliths. The aliquot was decanted. This step was then repeated.

14. Phytoliths were then decanted to a shell vial and placed in drying oven to remove excess liquid.

Phase 2: Microscope scanning

The phytolith extracts were quick-mounted in distilled water and viewed in an optical microscope at 400X. Particles of interest, especially those of morphological and taxonomic significance, were recorded on videotape using a hi-resolution CCD television minicamera mounted on the microscope. While Canada Balsam is used to mask inorganic silica while viewing, it also had the apparent negative effect of decreasing the contrast between particle and background. For purposes of contrast with background for computer digitization, distilled water mounts appeared superior.

Phytoliths and other biosilica bodies (e.g. sponge spicules) in each were noted and recorded on videotape. This makes assemblages of particles used in the current study available for re-study when local taxonomic reference work is conducted.

Phase 3: Compilation and interpretation of data.

In the absence of a regional phytolith database, published typological information was employed for classification of phytolith types. For grasses, the three tribal classification of Twiss, et al. (1969) into festucoid (wet, cool habitat), panicoid (wet, warm habitat) and chloridoid (dry, warm habitat) phytolith classes is the conventional standard, along with elaborations by Brown (1984). A fourth class, sasaoid or bamboo (Kondo 1977), as predicted, was not represented at Harpers Ferry.

For angiosperms (e.g. deciduous trees and shrubs) and conifers, Rovner (1971), Geis (1973), and Klein and Geis (1978) provide some guidance for eastern woodland flora content. The most elaborate work to date in these taxa has been done by Japanese experts (Kondo 1974, 1976, 1977; Kondo and Peason 1981; Kondo and Sase 1986; Kondo, et al. 1987) primarily on Asian flora. However, considerable similarity of illustrated phytolith forms at the genus level between American and Japanese plants provide confident guidance in the taxonomic assignment of distinctive phytoliths in these categories. Most recently studies (Cummings 1992; Bozarth 1992) have confirmed and refined the typology and taxonomy of phytoliths in dicotyledonous taxa. Distinctive material can now be attributed specifically to Asteraceae (Compositae), a dicotyledonous group well represented and ethnobotanically significant in the eastern United States.

RESULTS

Phytoliths attributed to non-grass, dicotyledonous taxa overwhelmed every slide. Distinctive and taxonomically useful forms were a definite minority to rare in all samples. Aquatic bioliths, such as sponge spicules and diatoms, were commonly observed at relatively low frequencies in many of the samples. Comparative study of the Park Building 48 phytoliths assemblages, with the sequence from the study of the old Master Armorer's house (Rovner, in press; see also Tables 9.1 and 9.2 below), suggest three general categories of phytolith assemblages occur during the historic period at Harpers Ferry: 1) a common background assemblage; 2) an impoverished assemblage with two sub-categories; and 3) an ethnobotanically modified assemblage.

The common background assemblage typically has a relatively high frequency of large sized phytoliths, such as bulliforms, squares, and blocky rectangles, which are known to occur commonly in grasses. However, taxonomically distinctive grass short cells are rare to absent. This is difficult to explain if indeed the large cells common in these assemblages derive from grasses. Nevertheless, this assemblage profile is clear and frequent. I suspect a common background assemblage is a mixture of alluvial flood deposit with phytoliths from a rich, natural pioneer grass and weed flora established on the flood sediments. Park Building 48 samples 10-I2, 5-F1, 1-G and 1-H1 are prime examples of this category. An impoverished assemblage is not necessarily devoid of phytoliths; rather it is lacking in the types of distinctive phytoliths that contribute to the background assemblage. Samples 10-B, 10-D, 10-H and all three 5-D's and 1-H3 illustrate this profile. Some of these assemblages appear truly impoverished, lacking much biosilica, and probably indicative of a sterile sub-soil or a barren surface deposit. Others may contain substantial non-grass, amorphous plates, plate fragments, aggregate cluster tissue, irregular globules, hair cells and hair bases, the latter two groups having high potential for future taxonomic assignment. These probably reflect dicotyledon dominant flora assemblages yielding little or no grass phytoliths types of any kind, large or small. Ethnobotanically modified assemblages show significant levels of grass short cells, often superimposed on an otherwise typical background assemblage. Samples 10-A and 5-F2 are the best examples of this type.

1820s

Sample 5-G (Megastratum VII). A relatively sparse assemblage, almost impoverished. Contains some dicotyledon phytolith material, a low frequency of grass phytoliths including two panicoid short cells. Possibly a sub-soil horizon with some mixing due to gardening activities from above.

1820 through 1830s

Samples 10-11 and 10-12 (Megastratum VII). Reasonably similar assemblages, both essentially common background type. Both also contain considerable dicotyledonous phytoliths, frequent black (ash?) fragments and ribbed tissue fragments (ash?), and a few aquatic bioliths.

Sample 1-H3 (Megastratum VII). A genuinely impoverished assemblage with few distinctive phytoliths of any category. Many particles are coarse, angular and blocky, possibly not biosilica. This could be a sterile sub-soil.

Sample 1-H1 (Megastratum VII). Contrasts with 1-H3 below. This layer supported a rich phytolith producing flora, a prime example of the common background assemblage.

1830s

Sample 1-H (Megastratum VII). Essentially similar to both 10-I samples below, including a strong presence of dicotyledon phytoliths, ash (?) fragments, and aquatic bioliths.

1840s

Sample 10-G (Megastratum V). While basically a background assemblage, there is a notable increase in the relative presence of grass short cells, both panicoid and festucoid, for the first time in the sequence. This result is possibly an indication of ethnobotanical modification, attempts at floral landscaping including lawn grasses.

Sample 10-F2 (Megastratum IV). A truly impoverished assemblage. It appears to be intrusive between two otherwise similar assemblages, 10-G below and 10-F1 above. Intrusion could come from a flood deposit that supported a restored ethnobotanical assemblage above rather than a natural pioneer weed intrusion. Alternatively, the intrusion may have resulted from deposition of displaced soils resulting from the construction of the addition to the house in 1844, following which the ethnobotanical influence was reimposed.

Sample 10-F1 (Megastratum IV). Very similar in all respects to sample 10-G.

Sample 5-F2 (Megastratum IV). This layer is the richest Park Building 48 sample in phytolith content. A rich background assemblage contains many hair cells, hair bases and morphologically distinctive unknowns. Two segments of Compositae (*Asteraceae*) tissue (Bozarth 1992) were observed. While this could result from a wide range of flowery weeds - from rag weed to goldenrod, the group also includes such garden ornamentals/domesticates as sunflower. Since the modification to the basic background assemblage in this level is virtually unique, appearing in no other level, it is clearly a cultural imposition rather than a natural weedy intrusion. In effect, without direct taxonomic evidence available, it would appear that garden flowers rather then weeds are likely. The most prominent feature of this sample is a notably high frequency of panicoid short cells. When grass short cells appear at the Master Armorer's house or elsewhere at Park Building 48, both festucoid and panicoid short cells appear with the balance usually favoring the festucoid group. In this case, the grass short cells are overwhelming panicoid, a combination of bilobates, rare polylobates and a high percent of cross bodies. Maize provides such a signature and, in light of the deviation from the profile of a natural intrusion of grasses as weeds, is the compelling candidate for providing this phytolith profile. Vegetable and/or flower gardening and landscaping appears likely at Park Building 48 during the early 1840s.

Sample 5-F1 (Megastratum IV). There is a stark and rapid return to a common background signature. The evidence for maize cultivation is absent. Such gardening activity was, therefore, short-lived. This may correlate with the intrusion noted in Excavation Unit 10 with the 10-F2 sample, but significant differences appear. Sample 10-F2 was a really "impoverished" sample, this one is not. Phytoliths are frequent, although grass short cells are notably absent. Three *Asteraceae* tissue segments were noted in this sample, a continuation of flowers, or flowery weeds, in this layer. While the continuation of flower growing cannot be ruled out in this layer, there is clearly no continuation of maize growing.

Sample 5-E (Megastratum IV). This layer is a weaker version of lower Sample 5-F1. A lower frequency of common background large cells occurs, but dicotyledonous plates, hair cells, and *Asteraceae* tissue are replaced largely by blocky, angular (inorganic?) particles. This is a sample showing a tendency toward impoverishment, evident in upper Sample 5-D1.

Samples 5-D3 and 5-D2 (Megastratum IV). Both are genuinely impoverished profiles. These are a more likely match to Sample 10-F2, suggesting a re-deposit of subsoil from construction, or topographic leveling fill, or an otherwise barren surface.

Sample 5-D1 (Megastratum IV). This layer is impoverished by the arbitrary definition. While it lacks both large and small grass cell phytoliths rendering it "impoverished", it is fairly rich in cellular plates, irregular nodules, hair cells and hair bases, silicified tracheids, etc., indicative of a rich weedy flora growing on this surface. This could reflect, for instance, a natural intrusion of weeds on the surface of the fill deposited in the yard.

Sample 1-G (Megastratum IV). This sample profile is similar to Sample 10-G. The (admittedly low) frequency of grass short cells is suggestive that a "kept yard" attempt at landscaping did occur in Excavation Units 1 and 10 prior to the construction of the east wing addition to the house. This might correlate with the maize gardening at Excavation Unit 5.

Early Twentieth Century

Sample 10-E (Megastratum I). This layer is a typical background profile with a heavy representation of dicotyledonous weed and tree phytoliths. The absence of grass short cell phytoliths suggests an unkempt yard with vigorous weed growth.

Samples 10-D and 10-B (Megastratum I). Both are impoverished in character, with 10-D showing a much higher presence of dicotyledonous weed phytoliths than does 10-B, which seems to be genuinely impoverished.

Sample 10-A (Megastratum I). This sample shows a weak background profile and a remarkably high frequency of grass short cells. Just as 5-F2 was distinctive in the presence of panicoid short cells, this sample is distinctive in its high frequency of festucoid short cells to the virtual exclusion of panicoid short cells. The balance of the two, representing a more natural grass assemblage, is absent. The obvious explanation is contemporary National Park Service landscaping using a variety of fescue lawn grass.

DISCUSSION

The phytolith data from Park Building 48 bears directly on two historical landscaping issues. First, does the evidence show any pattern of community standards of landscaping in effect during the early nineteenth century? Second, are any specific landscaping features evident in the phytolith record?

The phytolith data does not support "kept yard" landscaping efforts in the earliest samples studied, dating to the 1820s and 1830s. The presence of grass short cells, used as an index of deliberate landscaping at the old Master Armorer's house around this time, is absent at Park Building 48. In fact, Park Building 48 appears to reverse this trend directly. Some evidence of deliberate landscaping adjacent to the original structure appears in the early 1840s, apparently prior to the construction of the 1844 east wing addition. At the same time, vegetable gardening appears in the side yard. The period of gardening was brief, however, rapidly disappearing in the upper level soil samples dating to the 1840s.

This period of gardening coincides neatly with the residency of Augustus and Catherine Shope in the house from 1841 to 1844 (see Shackel and Lucas this volume). If Catherine Shope was running a boarding house during this period, a vegetable garden may have been established to provide some economic value in support of this enterprise. After the death of Augustus Shope in 1844, Catherine "moved her boarding house to the residence occupied by Michael Melhorn" who may have moved into Park Building 48 briefly at this time (Bumgardner 1991). At any rate, phytolith data suggest that landscaping and gardening efforts deteriorate after the Shope residency period at the structure until the building was acquired and landscaped by the National Park Service in the twentieth century.

CONCLUSIONS

Phytolith data provide evidence sensitive to the microenvironments of the Park Building 48 landscape through time. Park Building 48 does not show specific evidence of gardening or landscaping efforts prior to 1840. A brief period of gardening and "kept yard" is evident during the early 1840s when Augustus and Catherine Shope occupied the building from 1841 to 1844. The yards then deteriorated until the mid twentieth century when they were maintained by the National Park Service.

Table 9.1. Frequency of selected phytolith types -- Master Armorer's House.

	(n)	*Bull*	*Squ*	*Rect*	*Tric*	*Dent*	*Panic*	*Festu*	*Chlor*
Twentieth-Century									
900-A	(37)	12	8	6	2	3		6	
900-B22	(16)	7	5	3				1	
900-B24	(16)	7	4	3	2				
1870-1890s									
900-C	(17)	4	9	1	1	2			
900-E	(11)	2	3	2		1	1	2	
1882									
900-G	(37)	13	16	3	2	1		2	
1840-50s									
900-H	(4)	1				1			
1836-1840s									
900-I	(3)		1	1	1				
1820s-1832									
920-M(1830)	(67)	7	4	8	3	14	8	19	4
1820s									
900-M2(5)	(62)	9	4	6	7	9	3	23	1
900-M2(4)	(28)	5	6	5		1	3	5	3
Base levels Historic/Prehistoric transition									
900-M2/3(3)	(61)	16	12	6	1	2	8	13	
900-M3(2)	(51)	11	8	17	5		3	7	
900-M4(1)	(24)	6	8	4	1		2	3	

Key:
Bull = bulliform
Squ = square
Rect = rectangle
Tric = trichome
Dent = denticulat
Panic = panicoid short cell
Chlor = chloridoid short cell
OrnRod = ornamental rod (elongate)

Table 9.2. Frequency of selected phytolith types -- Park Building 48.

	(n)	*Bull*	*Squ*	*Rect*	*Tric*	*OrnRod*	*Elong*	*Panic*	*Festu*
UNIT 10									
Twentieth-Century									
10-A	(33)	1	6	4			4		18
10-B	(5)	1	2	2					
10-D	(2)	1		1					
10-E	(55)	7	10	5	5	1	20	4	3
1840s									
10-F1	(14)		1		1	1	4	5	2
10-F2	(5)	4		1					
10-G	(31)	5	6	3	1	1	7	4	4
1830s									
10-H	(15)	4	2	1	1	1	6		
1820-1830s									
10-I1	(24)	4	2	5	2	3	6	1	1
10-I2	(22)	5	8	5			3	1	
UNIT 5									
1840s									
5-D1	(5)	1		2		1	1		
5-D2	(4)			1	1		1		1
5-D3	(5)	1	2	1				1	
5-E	(14)	5	2	2			3	1	
5-F1	(27)	11	3	7	1		5		
5-F2	(73)	6	11	6	3	5	18	23	1
1820s									
5-G	(10)		2		2	1	3	2	
UNIT 1									
1840s									
1-G	(34)	7	5	8	6	1	3	2	2
1820-1830s									
1-H1	(66)	25	12	12	3	2	10	2	
1-H3	(8)	1		2		1	4		

Key:

Bull = bulliform
Squ = square
Rect = rectangle
Tric = trichome
Dent = denticulat

Panic = panicoid short cell
Festu = festucoid short cell
Chlor = chloridoid short cell
OrnRod = ornamental rod (elongate)

CHAPTER 10

A MATERIAL CULTURE OF ARMORY WORKERS

Paul A. Shackel

While some historians (i.e. Smith 1977; Wallace 1972) have paid an increasing amount of attention to the local social and cultural context of technological change, their analyses often lack evidence about the relationship of work life and the material and behavioral manifestations of domestic life. Historical archeological analyses at Harpers Ferry provide additional evidence for the affects of industrialism upon domestic life and indicate how the industrial superstructure shaped the everyday life of individuals. To understand how these people survived and interacted with each other on a daily basis, it is essential to link the material correlates and the growth of an industrial town to issues related to industrial capitalism.

The archeology of Park Building 48 focused on a parcel of land that served as an armory worker's dwelling at the Harpers Ferry National Armory during the first half of the nineteenth century. These excavations incorporate an interdisciplinary approach to answer questions about the building's architectural history, the changing cultural landscape, and the relationship between industrialism and domestic life. An analysis of the building and the cultural environment, along with an investigation of pollen and phytolith data, show the relationship between the altering landscapes and the changing social and economic structures within Harpers Ferry. Ceramics, armorers' tools, manufactured goods, and faunal materials dating to the first half of the nineteenth century are also examined in the context of a craft economy that changed to a manufacturing process dominated by factory discipline. Since the advent of the industrial revolution, society became saturated with factory by-products and was increasingly influenced by a new behavioral discipline. The market economy expanded into many different realms of daily life (Paynter 1988:407-410). An historical archeological analysis is one vehicle used to illuminate the roots of modern behavior, to identify the historical relations between groups, and to understand how these ideologies are maintained.

Investigations of armory workers' households in Harpers Ferry provide information about the changing daily life and consumption patterns of workers and their families. The analyses of changing consumption patterns focused on several armory workers and their families. Because some armory records have been destroyed it is uncertain who lived in Park Building 48 before 1841 and after 1852. Archeological and historical documentation demonstrates that Park Building 48 was originally constructed by armory worker William Smallwood. By the 1830s he became a wealthy landowner in the Bolivar Heights region, an area just outside of Harpers Ferry. How long William Smallwood and his family lived in Park Building 48 is uncertain, but armory workers and their families probably lived in the structure for most of the first half of the nineteenth century. Armory workers who lived in the building had occupations that included jobber, jobbing smith, mechanic, and master mechanic. It is currently undetermined if any of the armory workers' wives held wage paying jobs, although Catherine Shope ran a boarding house in Park Building 48 until her husband, Augustus, died. While it is difficult to isolate the archeological assemblages to specific occupations, it is clear that many of Park Building 48's families and residents were associated with the United States Armory and their domestic life was probably impacted by the changing routines of the armory.

Early manufacturing in the armory was based on a craft system that encouraged apprenticeships. Piece-work, a rudimentary form of a division of labor, was established in the armory by 1807 when six separate steps existed for the manufacture of rifles and pistols. By 1816 the manufacturing process had 55 different operations with lockmaking alone divided into 21 different steps. Most of the operations still existed under the piece-work system. This division of labor was comparable to that found at Springfield, although there was little subsequent change at Harpers Ferry. In 1825 the Springfield armory had divided labor into 100 occupational specialties, while Harpers Ferry had about 64 (Smith 1977:80-84). Harpers Ferry armorers resisted any new form of technology that consisted of highly productive machinery and time discipline. Such technical and organizational innovations threatened the armorers' craft as they feared becoming mere tenders of machinery, which is how they perceived their counterparts in Springfield (Smith 1977:102-137, 158).

As time discipline became the rule at other factories, Harpers Ferry remained task-oriented. Few restrictions were placed on the labor force. Superintendent Stubblefield and Master Armorer Beckham never enforced any work discipline or time thrift (Smith 1977:62-67, 149, 158). In 1829 George Rust, Jr. became the armory's superintendent, although he delegated most of his authority to Beckham's successor, Benjamin Moor. Rust, President Jackson's political appointee, spent most of his time attending to his personal affairs rather than tending to those of the armory (Smith 1977:257). Moor became dedicated to mechanical improvements as well as the design of a new musket with interchangeable parts. Some of the labor tasks were placed on a wage system while others received pay according to their production. By the mid 1830s the standardization of the workplace began to increase.

In 1841 military officers replaced civilian supervisors in an attempt to reinforce work discipline (Bushong 1941:89-90). Moor retained his position as master armorer. All sections of the Harpers Ferry armory were forced to abide by the division of labor, as well as to conform to regular daily work hours. Armorers felt their rights as workers were being threatened by the imposition of such labor discipline. Armed guards were posted at the armory gates to regulate the armorers' movements in and out of the facilities. In 1842 workers went on strike and chartered a canal boat to Washington, D.C., to present their grievance to President Tyler. While greeting them with friendship, Tyler advised the armorers to "hammer out their own salvation" (Barry 1984:34-37). In 1844 Major John Symington, an engineer, created a plan for the armory's renovation and a grid was imposed over the town. Government supervisors reorganized the daily customs of workers and rebuilt the factories. By 1854, 25 new structures were built, all within a unified architectural plan (Smith 1977:275-76), and many of the grounds were landscaped to provide additional uniformity and continuity (Shackel 1993).

Craft Versus Industry Among Armory Workers: The Archeological Evidence

Archeological evidence from Park Building 48 reveals the changing interrelationship between the armory's factory production and its relationship to domestic life. Craft orientation dominated armory production until the government seized control of its manufacturing process in 1841. Larsen (this report) shows a relatively high quantity of files (flat, round, and triangular) and weapon parts found in the pre-1841 assemblage. The materials may be a product of home production since some workers were paid by the piece. While Smith (1977) acknowledges that the armory lacked substantial factory discipline before the 1840s, no prior historical evidence exists for the possible home production of armory products. Smith (1977:270) also acknowledges that government tools were frequently sold to the public and the assemblage may be a product of an armorer's attempt to supplement his family's income. While some files were found in the later armory assemblage no weapons parts were found. This sparseness of gun-related materials in the later assemblage may be evidence of stricter manufacturing regulations, including the implementation of factory discipline and the abandonment of the piece-work process.

Dramatic difference are also noticeable in the armory workers' dining assemblages. Like the master armorer's assemblage (see Lucas 1993) armory workers' ceramic assemblages changed in relationship to the increased division of labor found at the armory, but in a much different way. While the master armorer kept up with the most fashionable consumer goods by purchasing an increasing number of variety of ceramics by the 1840s, this phenomenon was just the opposite in the case of the armory workers' assemblages. Vessel analysis by Lucas (this report) reveals a significant difference between the pre-1841 assemblage (Context E) and the post-1841 assemblage (Context D) for the armory worker's dwelling. The earlier context contains relatively higher quality ceramics. Porcelains and fashionable transfer prints dominate the plate assemblage and the majority of tea sets were transfer printed wares. The later context does not follow this pattern of armorer's purchasing the most fashionable wares, even though they had greater access to larger markets. The post-1841 assemblage contains materials that would have been outdated by several decades. These materials include creamware plates and a relatively large proportion of hand painted teawares. Also associated with these dining assemblages were cutlery pieces.

Of particular interest is that Context E contained three two-pronged forks and two knives, while Context D contained only one knife. According to Kasson (1990:189) the two-pronged fork is associated with left handed eating. At about 1830 three- and four- pronged forks were introduced. Associated with these new material goods was the practice of transferring the fork to the right hand after cutting a piece of food. Apparently the dwelling residents associated with Context E purchased the most fashionable dinner wares, while they retained the material culture of a recently outdated eating ceremony, i.e. left handed eating. The retention of unfashionable goods and the continued use of old cultural traditions may be seen by outsiders as a sign of vulgarity, when in fact, it may have been a standard cultural norm found among armorers.

Many variables exist that may explain the varying purchasing patterns of the armory dwelling residents from the 1820s through the 1850s. Emulation (McKendrick, et al. 1982), social segmentation (Little and Shackel 1989; Shackel 1993), and consciously or unconsciously resisting the order of industrial culture (Paynter 1989) are all variables that need to be considered when explaining new material culture patterning. The high percentage of porcelains may indicate that the armorers' households were emulating Harpers Ferry's higher social groups, while the continued use of other unfashionable dining equipment may be explained as culture lag. But these interpretations can only partially explain these phenomenon and the larger context of the armorer's rejection of industrial work discipline needs to be examined.

During the 1820s, and into the 1830s, a craft ethos still existed in the armory, although the use of mass-produced goods, division of labor, and the development of a modern behavior that regimented everyday life appeared to many armory officials as inevitable. This new modernizing process was uncommon among communities prior to the industrial revolution. Rather, a naturalizing ideology made these phenomena appear as part of the natural order (see Handsman 1983; Leone 1988; McGuire 1988; Paynter 1988). Even Armory Superintendent James Stubblefield commented in 1829 that the division of labor "would seem to be a matter of course, that could not be avoided" (Stubblefield quoted in Smith 1977:81). While armorers may have emulated society's elite who participated in the new industrial culture, resistance may have prevailed by not participating in the rules of a new dining etiquette.

Burk's diachronic faunal analysis (this volume) from the armorers' contexts provides significant contrasting data between the two assemblages at Park Building 48. Generally both of the armory assemblages have the same type of wild species. The only difference is the presence of cottontail in the latter assemblage, while the earlier component contained squirrel. The presence of these wild species may be the product of the armorers exploiting local foods for survival. While Context E has a significantly higher domestic biomass than the later component, it also has a higher proportion of cow than pig. Pig played a more significant role in the diets associated with the later context than in the earlier context. Sheep/goat became significantly less important in the later assemblage.

With the development of urbanization and the growth of industrialization, traditional home activities were replaced by wage labor activities. Once the individual's participation in a wage labor system increased, the choice of foods became tied directly to the market. During the urbanization process, legal restrictions, based on the need for better sanitary conditions, limited the types and amounts of slaughtering allowed in an area, thus moving the butchering process to peripheral areas to be performed by specialists (Bowen 1990). An examination of the armory worker's faunal assemblages indicates that this trend was not adhered to in the case of Park Building 48. Food home production appears to have increased as pig became increasingly important in the post-1841 assemblage. Food procurement shifted away from importing beef from regional and national markets. This increased home production may be a product of the armory worker's growing poverty created by the introduction of the new wage labor system. Decreasing reliance on the industrial infrastructure may also be a product of the armorer's desire to be relatively independent of the new industrial order. Self sufficiency in food production, even in small quantities, was one means that the armorers had to demonstrate their control over their own daily lives.

Changing landscapes in Harpers Ferry

The urbanizing and industrializing landscapes at Harpers Ferry serve functional purposes as well as create symbolic meaning. The land on which Park Building 48 stood was originally owned and operated by the Federal Armory the landscape changed according to the acceptance or rejection of industrial discipline. Allowing the rise of American industry during the late eighteenth and early nineteenth century was one of the most significant issues that faced the new nation (see Kasson 1979; Marx 1964). The majority of citizens believed that American society should remain agrarian since it was the only true and legitimate source of wealth. America was seen as a purifying natural paradise and relationships to the land were considered to be simple, harmonious, and responsible. Industrialists argued that factories should be located in rural areas and use labor not directly needed for farm production, such as women and children. Industrialists created an ideology that rural industry would make unimproved nature productive. Da Costa Nunes (1986:24) notes that the 1830s was a turning point in industrial development as urban areas swelled. Many Americans began to see the necessity of industrialization and self reliance after the War of 1812.

The original topography around Park Building 48 stood about 3.0 ft to 4.0 ft lower than the present elevation. The original core structure measured 19 ft by 15.5 ft along with several associated buildings. Between 1832 and 1851 a rear extension measuring 17.5 ft by 19 ft was added to the north side of the building. By 1841 the topography was about 1.5 to 2.0 ft higher and the two story east wing extension was added.

Both pollen and macrofloral records discussed by Cummings (this report) indicate that Park Building 48's yard was more formal in front of Park Building 48 prior to 1841. Pollen remains in Excavation Unit 1 suggests that some flowers existed in the earlier deposits. Samples from Excavation Unit 10, located in the front of the house, indicate that both weeds (especially low spine composite) and grasses (*gramineae*) existed in the site's earliest component, while the post 1841 deposits contained a significantly larger proportion of low-spine composite. Some kitchen debris was found in all occupational deposits. Samples from Excavation Unit 10 located in the side yard indicate a relatively low proportion of low-spine composite, a high proportion of *gramaneae* and the absence of non-floral macrofloral remains in the earliest historic deposits. These results indicate a well groomed space with the lack of kitchen debris. The presence of *Zea mays* pollen also suggests that the occupants probably supported a garden. The garden continued from the 1820s through the early 1840s although no *Zea mays* exists for the later part of the decade. By the mid to late 1840s the area became weedy and was used for kitchen debris discard. Low-spine Composite increased significantly during the post 1841 era and a greater variety of weeds were found in all areas of the yard. These weeds include sedge (Cyperaceae) and sphagnum (cf. Sphagnum), and their increased presence suggests weed succession following the discontinuance of the garden as well as the rest of the yard.

Phytolith analysis (see Rovner this report) indicates a relatively sparse assemblage throughout most of the nineteenth century, although in the early 1840s there is an increase in the relative presence of grass short cells. Rovner argues that this phytolith assemblage is present throughout to the rest of the armory occupations and, therefore, is probably a cultural phenomenon rather than a natural weedy intrusion. There is a frequency of grasses, mostly panacoid short cells, but also some from the festucoid group. This phenomenon ended after a few years as the phytolith record appears to be impoverished. The change may have been caused by flooding. An historic account of the 1843 flood (*Virginia Free Press*, 20 April 1843:2) notes the town's devastation and includes a description of the armorer's gardens ruined by the high waters. Grass short cells are noticeably absent, although evidence of daisy or sunflower (Composite) was present.

The armory worker's lot in Harpers Ferry serves to demonstrate the armory's manipulation of the landscape when it created an industry in a rural area and shows how the ideology of the "machine in the garden" changed in the 1830s when industry was seen as increasingly essential for America's survival in the world's economy. Generally, the yardscapes changed dramatically over time. While the earlier 1820s and 1830s landscape appears to be more formalized with grasses, the later 1840s and 1850s landscape is comparatively unkept and contained an abundance of weeds.

In the 1840s the military played an increasing role in the operation of the Harpers Ferry Armory. Previously, many of the armory factory buildings had been constructed when needed, sometimes of different materials and architectural styles. In the 1840s the military rebuilt the musket factory and rifle works using a uniform architectural style. By the 1850s the government's landscaping concerns also shifted to emphasize order and uniformity. Military correspondents noted the irregular landscape in the yards. The armory filled and graded the lands, creating a flat and uniform topography which reflected an era of industrial consciousness. Order, regularity, and formality now guided the workplace, the built environment, and the landscape. The earlier well-landscaped yards was probably a reflection of the ideology that created the image of a picturesque and harmonious coexistence between nature and industry. After the early 1840s it appears that the armory's industrialization took precedence over maintaining a formal "natural" landscaped environment.

THE INTERRELATIONSHIP BETWEEN FACTORY WORK AND DOMESTIC LIFE

Archeologists and social historians have paid little attention to understanding the nature of societal differences and the conditions that promote social change and continuity. In the case of Harpers Ferry, the changing landscapes, new consumerism, and the changing meanings of material goods established and redefined group identity among nineteenth-century armorers at Harpers Ferry. The development of the industrializing town was the creation of a modern discipline that affected domestic life and work life as well as the landscape and the built environment. The overall town and the industrial work shops became uniform in appearance as well as in plan, a product of a highly structured institution. The government asserted its influence by building a superstructure that was prominent and easily recognizable. The Work habits also became influenced by the government as these became highly regimented and structured.

Domestic values collided with the new approach to factory discipline. Armory workers expressed their displeasure with the dramatic change in the work place and united to strike in 1842. Soon after order presided over the armory and production rose. While it is uncertain whether the workers resisted the new factory discipline through sabotage or foot dragging, they did occasionally petition the superintendent and the chief of ordinance for shorter working days.

While the workers became relatively more compliant within the work area, they may have become more defiant in their own social arena (see Paynter and McGuire 1991:11). Reverting to a lifestyle and material culture of past generations may be interpreted by some as a product of poverty. It appears that the earliest armory workers at Park Building 48 consumed the most fashionable ceramics and increasingly relied upon imported beef. Soon after the military controlled the gun factory's operations, the acquisition of domestic goods dramatically changed. Armory workers increasingly relied upon domestic foods, such as pig, and used unfashionable goods that were popular a generation earlier when the armory ran according to a task-oriented system. Whether their failure to acquire these goods was an economic decision or a resolution to resist the new industrial culture is unknown, but the archeological record does indicate a very strong correlation between the changing work system and a new domestic material culture.

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26 October 1843:3

30 November 1843:2

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APPENDIX I:

EXCAVATION UNIT SUMMARIES

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Frank Walski and Eric Larsen

EXCAVATION UNIT 1 (N505 E505)

Excavation Unit 1 was opened to determine the architectural significance of Park Building 48. Feature 1, the former east wing to Park Building 48, was exposed on the surface. Layer A contained a thin level of loamy soil, probably a result of sod and natural accumulation. Only a few late artifacts were recovered. Layer B was a clay loam mottled with sand. Layer C had a silty sand and produced some late twentieth-century artifacts. Features 2, a builder's trench on the east side of Park Building 48, and Feature 3, a builder's trench on north side of Feature 1, cut this level. Layer D consisted of pea-gravel and served as a parking lot for Park Building 48 in the 1960s. Layers A-D all have a Terminous Post Quem (TPQ) of 1960. Layer E had similar stratigraphy to Layer D, but had less gravel. It was more compact and contained mixture of brick fragments, clay, silt, and sand. This layer most likely served as a fill layer for the base of the parking lot. Layer F was a late nineteenth or early twentieth century residential occupation layer and contained an iron pipe (Feature 4). The east wing wall (Feature 1) was partially removed to accommodate the pipe (Feature 4) and its associated trench (Feature 5).

Levels G-1 and G-2 were fill levels with early- to mid-19th century artifacts. Large shale spalls, pargetting and mortar suggest a construction or destruction layer. Layer H contained a silty loam and had less shale spalls than the previous levels. Layer H consisted of four arbitrary levels with the last two (H-3 & H-4) excavated in the western half of the unit only. The only artifacts found in Layer H were in Level H-1. No builder's trench existed. Feature 1 abutted Park Building 48 and had shale shams used, probably in the 1830s, to fill the gap between the two walls. Also the exposed walls from Layer D (pea-gravel parking lot) and above seems to have been added by the National Park Service rather than being original construction remains. The foundation for the east wing continues deeper than the foundation for Park Building 48.

HARPERS FERRY NATIONAL HISTORICAL PARK

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 1, (N505 E505)

MEGA Layers	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL TOP	BOTTOM	DESCRIPTION
--	SOD	N/A	N/A	269.60	269.46	SOD
I	A	10YR 3/2	CLAYEY LOAM	269.46	266.17	TOPSOIL
I	B	10YR 3/2 MOTTLED 10YR 3/6	CLAYEY LOAM AND SAND	269.39	269.23	TRANSITION-MOTTLED LAYER OF TOPSOIL AND SAND
I	C	10YR 4/3	SAND SILT	269.23	269.00	SAND FOR LANDSCAPING/DRAINAGE
I	D	10YR 3/2	GRAVEL	269.60	268.69	GRAVEL BEDDING FOR DRAINAGE OR PARKING SURFACE
II	E	10YR 3/2 10YR 4/4	SANDY LOAM	268.69	268.25	FILL LAYER-MIX OF SAND, CLAY, SILT, GRAVEL, AND BRICK FRAGMENTS
II	F	10YR 3/2	SANDY SILT	268.25	267.86	FILL LAYER WITH MID 19TH-CENTURY ARTIFACTS
IV	G-1	10YR 3/3	LOAM WITH GRAVEL	267.86	267.31	FILL LAYER WITH SHALE SPALLS. LEVEL ARBITRARILY ENDED AFTER 0.5 FT
IV	G-2	10YR 3/3	SILTY LOAM	267.31	266.69	FILL LEVEL WITH FIRST HALF OF THE 19TH-CENTURY ARTIFACTS AND HEAVY SHALL SPALLS
VII	H-1	10YR 3/3	SILTY LOAM	266.69	266.17	EARLY 19TH-CENTURY DEPOSITS
VII	H-2	10YR 3/2	SILTY LOAM	266.17	266.00	EARLY 19TH-CENTURY DEPOSITS
VII	H-3	10YR 3/2	SILTY LOAM	266.00	265.45	STERILE NATURAL ACCUMULATION
VII	H-4	10YR 3/2	SILTY LOAM	265.45	264.88	STERILE NATURAL ACCUMULATION
I	FEATURE 1	N/A	SHALE	267.86	264.68	MORTAR LAID SHALE FOUNDATION
I	FEATURE 4	N/A		267.86	267.75	1" DIAMETER IRON PIPE (POSSIBLY WATER)
I	FEATURE 5	10YR 4/4	SILT	267.82	267.42	PIPE TRENCH FOR FEATURE 4

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Frank Walski and Eric Larsen

EXCAVATION UNIT 2 (N522.2 E505)

Excavation Unit 2 was opened to provide artifact and architectural data to understand the relationship between Park Building 48 and the adjacent east wing foundations. Archaeology also established the depth of bedrock at the rear of the house and determined the abundance of cultural remains outside of the rear exterior of the east wing foundation (Feature 1).

Approximately 0.1 inch of sod was removed without screening and revealed the top of Layer A. Layer A consisted of a dark yellow brown silt and appeared to be the National Park Service occupation. The gravel inclusion consisted of small flat spalls, light brown to red in color, distinct from typical Harpers Ferry shale. Very few artifacts were found and consisted of plastic, mortar, and shell. Layer A probably consisted of fill dirt for landscaping purposes.

Layer B was a very dark gray-brown silty loam with many shale spalls. Artifacts such as dairy bottles, mason jars and lids, can fragments and cloth suggest a 20th-century deposit. Since shale spalls and artifacts were sometimes found suspended vertically on edge it suggests a sudden fill episode rather than a more gradual accumulation. Layer B was divided into two levels because of a change in the density of gravel inclusion. Level B included gravel and shale spalls while Level B2 included larger shale spalls and less grave.

Layer C was a very dark gray-brown silty loam with shale spalls, root and rootlets. Layer C lacked the gravel found in levels B1 and B2. Layer C held very few artifacts; mostly flat glass, a few nails, small ceramic sherds, brick, and mortar. The frequency of artifacts diminished as the layer progressed. Layer C as divided into three arbitrary levels of approximately 0.5 inch in depth. One modern roofing nail was found in C-3, but was there probably as a result of the many roots that crossed the unit. Layers C-2 and C-3 contained artifacts that date these layers to the early nineteenth century. Layer C came down onto bedrock across the unit. Bedrock sloped from 269.74 feet (along the north wall) to 268.14 (along the south wall).

Three features were included in Excavation Unit 2. Feature 1, the foundations adjacent to Park Building 48, made up the south wall of the unit. Feature 1 articulated with Park Building 48 only in the upper one foot. This phenomenon may be a product of the National Park Service's repointing in the 1960s. Below the upper one foot the walls did not join, but did have a few shale spalls wedged into the gap.

Feature 7, located at the top of C-1, was a concrete support for a PVC ventilation duct put in by the National Park Service. This concrete support was only a few tenths of an inch thick. Feature 8, located at the top of C-2, appeared to be a builder's trench for Feature 1. A patch of silty clay against the foundation held a few nails, a piece of blue shell edge ceramic, and a piece of slip decorated ware with a worm pattern suggesting an early nineteenth century date. The "trench" however, did not prove very deep.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 2, (N522.2 E505)

MEGA Layers	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT		DESCRIPTION
				TOP	BOTTOM	
-	SOD	N/A	N/A	271.09	270.98	SOD
I	A	10YR 4/4	SILT	270.98	270.63	FILL LAYER CONSISTING OF SILT, SHALE, AND ROOTS
II	B-1	10YR 3/2	SILTY LOAM	270.63	270.33	20TH-CENTURY FILL LAYER WITH A HIGH DENSITY OF GRAVEL
II	B-2	10YR 3/2	SILTY LOAM	270.33	269.97	SAME AS B-1 EXCEPT FOR LESS GRAVEL (POSSIBLE DESTRUCTION LAYER)
II	C-1	10YR 3/2	SILTY LOAM	269.97	269.44	ABUNDANT SHALE SPALLS. MAY BE ASSOCIATED WITH CONSTRUCTION OR DESTRUCTION OF THE EAST WING OF PARK BUILDING 48 (FEATURE 1)
IV	C-2	10YR 3/2	SILTY LOAM	269.44	268.86	ABUNDANT SHALE SPALLS. MAY BE ASSOCIATED WITH CONSTRUCTION OR DESTRUCTION OF THE EAST WING OF PARK BUILDING 48 (FEATURE 1 ASSOCIATED) ALSO BEDROCK APPEARING AT THE NORTH END OF EXCAVATION UNIT
VII	C-3	10YR 3/2	SILTY LOAM	268.86	268.39	ABUNDANT SHALE SPALLS. MAY BE ASSOCIATED WITH CONSTRUCTION OR DESTRUCTION OF THE EAST WING OF PARK BUILDING 48 (FEATURE 1). BEDROCK FORCED COMPLETION OF EXCAVATION UNIT
I	FEATURE 7	N/A	N/A	270.35		CONCRETE SUPPORT FOR THE 1960S VENTILATION DUCT
I	FEATURE 8	10YR 4/3	SILTY CLAY	269.48	268.84	BUILDER'S TRENCH ASSOCIATED WITH FEATURE 1 DATING TO THE 1830S

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Eric Larsen and Frank Walski

EXCAVATION UNIT 3 (N510 E520)

Excavation Unit 3 was excavated within the confines of the eastern wall of the east wing and the two short walls that extended 2.6 ft westward toward Park Building 48. This location was chosen to determine whether or not this area contained the remains of an old fireplace. The unit was excavated to an average depth of 4.35 feet below ground surface with the deepest area in the southwest portion of the unit. Excavations discontinued once bedrock was found.

The first layer (A) consisted of post-1960s topsoil and fill. In Excavation Units 1 and 2, this layer was divided into two distinct levels but, because of the relatively modern nature of the material, we decided to remove these layers together. An assortment of artifacts were recovered including whiteware, bottle and window glass, a pull-top can tab in addition to plastic paper, metal, wood, and a clamshell.

Layer B consisted of 95% pea-gravel and was probably a post-1960s parking lot. This layer also produced some ceramics, metal, and nails. Some cellophane was also recovered.

Layer C was probably the last cultural layer before being buried by National Park Service fill. Approximately one foot below the present surface a double row of bricks (Feature 9) appeared and the remains of some others that suggest an old floor. This layer produced a marble, bone and some coal in addition to the usual artifacts and dates from the late nineteenth century to the mid-twentieth century.

Layer D consisted of two arbitrary levels. The soil consisted of a sandy loam with many shale spalls (75%). Few artifacts were recovered, just a few nails and pieces of ceramics. This layer could have been construction debris of the remains of the original structure or it could have been demolition debris from the quarrying of the mountainside directly behind (north) the Park Building 48. In any case, it contained only early nineteenth century materials. Feature 10 also appears in this layer. It consisted of seven whole and partial bricks embedded atop mortar within the fireplace. This was probably the remains of the fireplace floor.

Layer E came down on bedrock and produced domestic debris dating to the 1830s-1840s. Materials included some creamware, porcelain, bone, and a nail. Feature 11 appeared in Layer D and lined the fireplace.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 3, (N510 E520)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
-	SOD	N/A	N/A	269.98	269.94	GRASS/SOD LAYER
I	A	10YR 3/3	LOAM	269.94	269.48	POST 1960S TOPSOIL AND FILL. IN UNIT 1 THIS LAYER WAS DIVIDED INTO TWO LAYERS (A & B)
I	B	10YR 3/2	GRAVEL AND SAND	269.48	269.22	LATE 20TH-CENTURY GRAVEL PARKING LOT
I	C	10YR 3/2	SANDY LOAM	269.22	268.93	CULTURAL LAYER RELATED TO LATE 19TH- AND EARLY 20TH-CENTURY OCCUPATION
IV	D-1	10YR 3/3	SANDY LOAM WITH LOTS OF SHALE	268.93	268.42	MANY SHALE SPALLS, POSSIBLY FROM CONSTRUCTION/DESTRUCTION OF BUILDING. EARLY 19TH-CENTURY CULTURAL DEPOSITS
IV	D-2	10YR 3/3	SANDY LOAM WITH LOTS OF SHALE	268.42	267.57	MANY SHALE SPALLS, POSSIBLY FROM CONSTRUCTION/DESTRUCTION OF BUILDING. EARLY 19TH-CENTURY CULTURAL DEPOSITS
IV	E	10YR 3/3	SANDY LOAM WITH POCKETS OF CLAY	267.57	267.11	POSSIBLE FILL WITH DOMESTIC DEBRIS DATING TO THE 1830S
IV	F	10YR 2/2	SANDY LOAM WITH SOME CLAY	267.11	265.94	POSSIBLE FILL WITH DOMESTIC DEBRIS DATING TO THE 1830S
II	FEATURE 9	N/A	N/A	269.41	267.11	BRICK FLOORING; LAST CULTURAL LEVEL BEFORE PARK OCCUPATION
IV	FEATURE 10	N/A	N/A	268.61	267.11	SEVEN WHOLE AND PARTIAL BRICKS EMBEDDED IN MORTAR OF A POSSIBE FIREPLACE
IV	FEATURE 11	N/A	N/A	268.41	BEDROCK	SHALE LINING (PART OF HEARTH)

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Paul Shackel, Eric Larsen and Frank Walski

EXCAVATION UNIT 4 (N516 E505)

Excavation Unit 4 was excavated in the northwest corner of the exposed foundation. The unit lay slightly off grid in order to expose the southern face of the north wall of Feature 1 as well as to reveal the nature of the articulation between Park Building 48 and Feature 1.

The sod layer was removed and soils were not screened for Layer A. This layer consisted of brown-dark brown sandy loam and averaged about 0.6 feet in depth. The National Park Service deposited this layer in the 1960s over Llayer B. Layer B is attributed to the 1960s and was used as a parking area for the occupants in Park Building 48 during the early National Park Service occupation.

Layer C was excavated in two arbitrary layers. The soil consisted of a dark brown clayey loam and contained deposits from the late nineteenth to early twentieth century. Layer D underlaid Layer C and was excavated in four arbitrary layers. Most of the soil consisted of a high concentration of shale and dark brown silty loam with first half of the nineteenth century artifacts. These artifacts included creamwares, pearlware, and a variety of hand-painted wares and early transfer prints. Underlying D was Layer E which was divided into two arbitrary layers. The soil appeared to be sterile.

Generally, the north wall profile indicates different construction techniques on the east wing wall. The top 1.5 ft was repointed and probably rebuilt by the National Park Service in the 1960s.

A seam exists at the conjunction of Park Building 48 and the east wing, thus indicating different building episodes.

HARPERS FERRY NATIONAL HISTORICAL PARK

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 4, (N516 E505)

MEGA STRAT	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
-	SOD			270.06	269.88	SOD
I	A	10YR 3/3	SANDY LOAM	269.88	269.47	FILL RELATED TO PARK SERVICE ACTIVITIES-POST 1960S
I	B	10YR 3/3	PEA GRAVEL	269.47	268.90	GRAVEL FOR PARK SERVICE PARKING LOT
II	E-1	10YR 4/3	CLAYEY LOAM	268.90	268.38	LATE 19TH-EARLY 20TH-CENTURY DOMESTIC REFUSE
II	C-2	10YR 4/3	CLAYEY LOAM	268.38	267.38	CONTINUATION OF C-1; LATE 19TH-EARLY 20TH-CENTURY DOMESTIC REFUSE
IV	D-1	10YR 3/3 10YR 4/3	SILTY LOAM	268.16	267.74	DOMESTIC REFUSE FROM THE 1830S. A HIGH CONCENTRATION OF SHALE
IV	D-2	10YR 3/3 10YR 4/3	SILTY LOAM	268.74	267.38	CONTINUATION OF D-1; 1830S DOMESTIC REFUSE. A HIGH CONCENTRATION OF SHALE
IV	D-1	10YR 3/3 10YR 4/3	SILTY LOAM	268.16	266.85	CONTINUATION OF D-2; 1830S DOMESTIC REFUSE WITH A HIGH CONCENTRATION OF SHALE
IV	D-4	10YR 3/3 10YR 4/3	SILTY LOAM	266.85	266.46	CONTINUATION OF D-3; 1830S DOMESTIC REFUSE WITH A HIGH CONCENTRATION OF SHALE
VII	E-1	10YR 4/4	SILT	266.46	268.38	NATURAL RIVER DEPOSIT WITH SHALE SPALLS
VII	E-2	10YR 4/4	SILT	265.91	268.38	NATURAL RIVER DEPOSIT WITH SHALE SPALLS

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Ken Kulp and Frank Walski

EXCAVATION UNIT 5 (N510 E535)

Excavation Unit 5 was excavated in order to provide archaeological data regarding the landscape and filling in the side area. After the removal of the sod layer, Layer A was excavated. Layer A consisted of a dark greyish brown dry soil and contained large amounts of shale. Layer A was divided into three arbitrary levels. A semi-round stain of yellowish brown soil in the northwest corner was designated Feature 12. Feature 12 consisted of silty clay and fine shale and was divided into two arbitrary levels. This feature was probably a different fill episode or a fill disturbance. A braided piece of string or hair was found in the feature and seemed to outline the outside of the feature. The profile of the north and west walls indicates that the feature cut layer A2, A3, B and protrudes into Layer D1. Layer B was located in the northeast half of the unit and consisted of a dark greyish brown loam with shale spalls. All layers above Layer C was determined to be 1960-70s National Park Service, deposited fill. Layer C, a 1920s fill layer, was located in the southwest half of the unit and consisted of a dark grey loam with few shale spalls and periodic ash lenses. Layer D, a dark greyish brown loam with 80% shale spalls, was determined to be a continuation of Layer B with Layer C sandwiched between. Layer D was arbitrarily divided into three levels with Layer D3 divided into north and south sections. A loam with silt and small shale pieces characterized Layer D3 north. This layer contained very few artifacts but had a pocket of woodland snail shells. Layer D3 south was characterized by a very dark greyish brown loam with shale spalls. This layer terminated on top of Layer E and contained a hole in the extreme west side of the level. Layer E consisted of a dark yellowish brown silty clay with inclusions of dark brown silty clay. Layer E was probably a different episode of fill. Layer F, a 10yr 3/3 dark brown loam, contained large amounts of shale and was determined to be a continuation of shale fill that has dominated almost every layer in Excavation Unit 5. Two arbitrary levels separated Layer F. Artifacts were found in Layer F1 but not in F2. Layer G, a 10yr 4/3 brown/dark brown silt with cobbles and shale spalls, ended up to be a natural sterile level. Only the northwest quadrant of Layer G was excavated. Layers D through G represent fill activity from the first half of the 19th century.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 5, (N510 E535)

MEGA STRAT	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
-	SOD	N/A	N/A	269.79	269.68	GRASS/SOD LAYER 1960S AND 1970S
I	F1	10YR 4/2	SILTY LOAM	269.68	269.28	PROBABLY MIXED FILL
I	D1	10YR 4/2	SILTY LOAM	269.28	267.74	CONTINUATION OF MIXED FILL WITH SOME AREAS CONTAINING LESS SHALE
I	A3	10YR 4/3	SILTY LOAM	269.79	269.68	CONTINUATION OF FILL CAME DOWN UPON ASH AND SHALE LAYER
I	FEATURE 12A	10YR 5/6	SILTY CLAY	268.92	268.11	FILL DISTURBANCE WITHIN SHALE FILL
I	FEATURE 12B	10YR 5/6	SILTY CLAY	268.78	267.87	CONTINUATION OF FILL DISTURBANCE WITHIN SHALE FILL
II	B	10YR 4/2	LOAM	268.78	268.11	FILL (DEMOLITION OR CONSTRUCTION DEBRIS WITH 80% SHALE SPALLS CA. 1820S)
II	C	10YR 4/1	LOAM	269.79	269.28	FILL WITH AS 1820S LENS AND SOME SHALE
IV	D1	10YR 4/2	LOAM	268.28	267.74	A CONTINUATION OF Layers B WITH Layers C SANDWICHED IN WESTERN HALF OF UNIT. FIRST HALF OF 19TH CENTURY
IV	D2	10YR 4/2	SILTY LOAM	269.79	269.28	CONTINUATION OF STARTA D1 FILL
IV	D3 NORTH	10YR 4/2	SILTY LOAM	267.33	266.79	FILL LAYER THAT DID NOT CONTAIN MANY ARTIFACTS. UNDERLIES STRE
IV	D4 SOUTH	10YR 3/2	LOAM	267.09	266.84	LAYER BOTTOM OUT INTO Layers E WITH HOLE IN EXTREME WESTERN SIDE
IV	E	10YR 4/4	SILTY CLAY	266.94	266.83	LENS PROBABLY A DIFFERENT EPISODE OF FILL
V	F1	10YR 3/3	LOAM	266.83	266.43	CONTINUATION OF SHALE LAYER
V	F2	10YR 3/3	LOAM	266.43	265.68	CONTINUATION OF SHALE LAYER
VII	C	10YR 4/3	SILT	256.68	265.68	NATURAL STERILE LEVEL

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Eric Larsen and Paul Shackel

EXCAVATION UNIT 6 (N530 E475)

Excavation Unit 6 was opened on the west side of Park Building 48 to determine if cultural remains were intact. The unit was located near the base of a stone retaining wall at the bottom of a large dropoff. The unit would have been located in or near a "lean to" that was present next to Park Building 48 in the 1950s and 60s.

Layer A was redeposited silt that eroded from the hillside above. Layer A contained a mixture of artifacts (early and late twentieth-century) which included hard and "soft" paste whitewares, bottle glass, chimney glass, nails, cellophane and plastic.

Layer B was also a silt layer, but also held shale spalls and roots. Artifacts range from early nineteenth century creamware and shell edge to twentieth century plastic and pull tab. Layer B was divided into two arbitrary levels. The range of artifacts suggest Layer B was the result of a fill episode.

Layer C consisted of compact silt and shale. Artifacts found were only small sherds. Ceramics included annular ware, shell edge, and other pearlwares. Glass included jar (screw top) finishes. One small piece of styrofoam was found, but may have been the result of root action. Layer C was divided into three arbitrary levels. The majority of artifacts were found in the topmost level. In Level C2 there was one piece of mocha, one piece of whiteware, 1 piece of glass, and one nail. Level C3 was sterile of artifacts.

Feature 13 was found soon after beginning Layer B. Feature 13 consisted of large shale slabs with finished edges laid in a line. It was first thought to be a possible walkway, but is more likely to be bedding or grounding for the "lean to" that was present next to Park Building 48 in the 1950s and 60s. The slabs seem to line up with where the supports for the structure met Park Building 48.

Excavation Unit 6 was ended because of the difficulty in digging and that artifacts ceased to be found.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 6, (N530 E475)

MEGA STRAT	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT		DESCRIPTION
				TOP	BOTTOM	
I	A	10YR 5/3	SILT	271.02	270.80	REDEPOSITED SILT ERODED FROM HILLSIDE ABOVE.
I	B1	10YR 5/6	SILT	270.80	270.42	FILL LEVEL WITH SHALE SPALLS-ARTIFACTS RANGE FROM EARLY 19TH TO 20TH CENTURY
I	B2	10YR 5/6	SILT	270.42	270.09	FILL LEVEL WITH SHALE SPALLS
II	C1	10YR 6/4	SILT	270.09	269.68	LEVEL OF COMPACTED SILT AND SHALE-ARBITRARY LEVEL
II	C2	10YR 6/4	SILT	269.68	269.37	LEVEL OF COMPACTED SILT AND SHALE-ARBITRARY LEVEL
II	C3	10YR 6/4	SILT	269.37	268.89	LEVEL OF COMPACTED SILT AND SHALE-ARBITRARY LEVEL
I	FEATURE 13	N/A	SHALE	270.44		LARGE SHALE SLABS PERHAPS AS GROUNDING FOR 1950S-60 "LEAN-TO"

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Ken Kulp and Frank Walski

EXCAVATION UNIT 7 (N517.5 E481)

The western wall of Park Building 48 determined the eastern boundary of the Excavation Unit 7. The eastern edge straddled what appeared to be a crack in the exterior wall at a point approximately 15.5 feet from the front southwest corner of Park Building 48. The unit was excavated to examine the articulation between the original 1820s portion of Park Building 48 and its northern addition. Generally, the front foundation of the original portion of Park Building 48 extended 1.4 feet deeper than the back section. A breakdown of the various layers are as follows: Layers A, B, C (C1 and C2) were post 1960s fill with an assortment of old and new artifacts, including plastic in A, B, and C1 and a minnie ball in C2.

D1 and D2 were flood deposits and produced a variety of artifacts including a brass "Civil War" button in addition to the standard assortment of ceramics, glass, and nails. D1 was excavated over the entire unit whereas D2 was only excavated on the eastern half.

Layer E included arbitrary levels that were excavated in the eastern half of the unit except for the final level (E4) which was dug only in the southeast quadrant. These were 1840s fill/habitation levels and produced quite a few artifacts including a bullet and marble from the first level. Levels E3 and E4 were sterile.

The northern edge of a foundation wall (Feature 22) was found in the southern profile of the unit. It appeared at 1.2 feet below the surface and ended at 2.7 feet below the surface. It extended westward from Park Building 48 where it disappeared into the profile. The feature was found in Megalayer IV and dates to the 1830s. It was partially destroyed when workers dug a trench for Feature 16 and 18 (for two 4" PVC pipes).

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 7, (N517.5 E481)

MEGA STRAT	STRATUM	MUNSEL L	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
I	A	10YR 5/4-4/4	SILTY CLAY	271.01	270.68	SOD AND MODERN FILL (1970S AND LATER)
I	B	10YR 3/2	LOAM	270.68	270.48	FILL LAYER (PROBABLY 1960S)
I	C1	10YR 4/3	SILTY LOAM	270.48	270.04	FILL PRIOR TO 1963. SMALL PIECES OF SHALE
I	C2	10YR 5/3	SILTY LOAM	270.04	269.54	FILL PRIOR TO 1963. SMALL PIECES OF SHALE
II	D1	10YR 5/6	SILTY LOAM	269.54	269.08	POSSIBLE FLOOD DEPOSIT
II	D2 EAST 1/2	10YR 5/6	SILTY LOAM	269.08	268.87	FLOOD DEPOSIT WITH A CINDER/ASH INCLUSION IN THE SOUTHEAST CORNER (CINDER/ASH WAS LATER DESIGNATED AS FEATURE 20)
IV	E1	10YR 5/3	SILTY LOAM	268.87	268.38	1830S FILL LAYER WITH 80% SHALE.
IV	E2	10YR 5/3	SILTY LOAM	268.38	269.08	ARBITRARY LEVEL. 1830S FILL WITH 80% OF SHALE
IV	E3	10YR 5/3	SILTY LOAM	267.98	267.63	ARBITRARY LEVEL (STERILE)
IV	E4 SOUTHEAST QUAD	10YR 5/3	SILTY LOAM	267.63	266.90	ARBITRARY LEVEL AND FINAL LEVEL (STERILE)
I	FEATURE 14A	10YR 4/3	LOAM	270.68	270.14	PIPE TRENCH FOR FEATURE 16
I	FEATURE 14B	N/A	PEA-GRAVEL	270.68	269.54	PIPE TRENCH FOR FEATURE 16 CONSISTING OF PEA-GRAVEL
I	FEATURE 15	10YR 4/3	SANDY SILT	270.68	269.30	PIPE TRENCH FOR METAL (4") PIPE THAT WENT TO THE SEPTIC TANK
I	FEATURE 16	WHITE	N/A	270.68	269.65	4" PVC PIPE (DRAIN FROM THE RAIN GUTTERS)
I	FEATURE 17	N/A	METAL PIPE	269.67	269.30	4" METAL PIPE GOING TO THE SEPTIC TANK
I	FEATURE 18	WHITE	N/A	269.55	269.21	4" PVC PIPE WHICH WAS CONNECTED TO FEATURE 17 WHEN THE SYSTEM WAS HOOKED UP TO SEWERS
I	FEATURE 19	10YR 5/3	SILTY LOAM	269.60	269.21	BUILDERS TRENCH FOR FEATURE 18
IV	FEATURE 20	10YR 4/3	LOAM	268.96	269.21	ASH/CINDER INCLUSION IN SOUTHEAST CORNER OF UNIT NEXT TO ORIGINAL PORTION OF BUILDING 48
IV	FEATURE 22	N/A	N/A	239.55	268.05	POST 1820S WALL FOR EITHER LANDSCAPING OR ADDITION

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Eric Larsen and Paul Shackel

EXCAVATION UNIT 8 (N530 E445)

Excavation Unit 8 was opened on the flat, elevated area on the west side of Park Building 48. The unit was placed there with hopes of finding an early nineteenth-century privy. The location of a twentieth-century privy (in use through the 1950s) was found on the embankment as a result of conversations with Carol Harder, a former resident of the building. It was hoped that earlier privies would be near by.

Layer A appeared to be a twentieth-century layer mixed with material that had eroded down the hillside. Artifacts such as door plates, hinges, shoe eyelets, door knobs, whitewares, buttons, plastic items, and bottles all suggest an early twentieth century date for the layer. Layer A was divided arbitrarily into three levels. Another former resident came by the site and told us that he had once kept a garden were the terrace now is. This may account for the mixing in the top of Layer A.

Layer B was an accumulation of compact silt and shale spalls. Artifacts were scarce and fragmented but suggested a late nineteenth-century date. Artifacts were concentrated at the top of Layer B. The surface of Layer B proved not as steep as the current grade. This suggests that the yard may have extended farther north than currently possible and that remains of outbuildings may be found north of where originally thought. Layer B was not excavated to its end since it was becoming sterile and difficult to proceed.

One feature was found within Level A2. Feature 23 was a dry laid shale wall, only a few courses deep, and ran eastwest through the unit. The wall was not wider than 1.0 ft, and so did not likely support any large amounts of weight. The wall was set at the surface of Layer B and was not sunk below. Feature 23 was perhaps a support for a small outbuilding. A photograph of the west side of Park Building 48, taken in 1898, shows that in the side yard a small building or shed. Feature 23 was probably the footring for this outbuilding.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 8, (N530 E445)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
I	A1	10YR 2/2	SILTY LOAM	275.10	274.43	FILL LEVEL THAT ENDED ARBITRARILY
I	A2	10YR 2/2 10YR 4/4	SILT	274.43	273.92	FILL LEVEL THAT ENDED ARBITRARILY
I	A3	10YR 2/2 10YR 4/4	SILT	273.92	273.49	FILL LEVEL
III	B1	10YR 5/4	SILT	273.49	273.03	NATURAL ACCUMULATION. COMPACT SILT WITH FEW ARTIFACTS-ENDED ARBITRARILY
III	A1	10YR 5/4	SILT	273.03	272.60	NATURAL ACCUMULATION. NO ARTIFACTS-UNIT ENDED
I	FEATURE 23	N/A	SHALE	274.04	273.70	DRY LAID SHALE "WALL" RUNNING EAST-WEST

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Ken Kulp and Frank Walski

EXCAVATION UNIT 9 (N530 E445)

Excavation Unit 9 was opened to determine if any features were located in a stone fenced terrace embankment, to the west of Park Building 48. Layer A1 represents present ground surface. A dark brown loam comprised most of Layer A which was separated into four arbitrary levels. Roots, rootlets, small shale spalls, ash lenses and a dark yellowish brown clay loam, also were included in Layer A. A distinct change between Layer A and B was noticed. Layer B consisted of a yellowish brown loam with sand and shale spalls. Layer B was divided into four arbitrary levels and contained nineteenth-century artifacts. A shale boulder dominated the unit in Layer B2 to B4 and was believed to be bedrock.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 9, (N530 E445)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT		DESCRIPTION
				TOP	BOTTOM	
I	A1	10YR 3/3	LOAM	274.13	273.55	FILL LAYER WITH ASH
I	A2	10YR 3/3	LOAM	273.55	273.21	20TH-CENTURY FILL
I	A3	10YR 3/3	LOAM	273.21	272.42	20TH-CENTURY FILL WITH 10YR 4/6 DARK YELLOWISH BROWN LENSES
I	A4	10YR 3/3	LOAM	272.82	272.42	20TH-CENTURY FILL
III	B1	10YR 5/4	LOAM WITH SAND	272.42	272.00	LATE 19TH-CENTURY FILL WITH SHALE
III	B2	10YR 5/4	LOAM WITH SAND	272.00	271.59	LATE 19TH-CENTURY FILL WITH SHALE (2 LARGE PIECES IN EAST WALL)
III	B3	10YR 5/4	LOAM WITH SAND	271.59	271.11	LATE 19TH-CENTURY FILL WITH BROKEN SHALE AND POSSIBLE BEDROCK
III	B4	10YR 5/4	LOAM WITH SAND	271.11	270.31	LATE 19TH-CENTURY FILL WITH BROKEN SHALE AND BEDROCK

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Eric Larsen, Ken Kulp, Jill Harris, and Paul Shackel

EXCAVATION UNIT 10 (N500 E515)

Excavation Unit 10 was opened on the south side of the east wing foundation to see if cultural material existed between the foundation and Shenandoah Street. The unit was laid on the grid with the foundation wall (Feature 1) forming the north edge of the unit. The sod was removed without screening to reveal the first layer.

Layer A, a loamy clay, held twentieth-century artifacts such as plastic and foil. This layer of topsoil can be safely attributed to National Park Service occupation.

Layer B can also be attributed to National Park Service occupation. Layer B was a bedding of sand probably laid beneath the topsoil to aid with drainage. It was told to us by maintenance personnel that Park Building 48 had problems with excessive "dampness." This is still evident at the rear of the house, where bedrock is exposed. Artifacts again suggest twentieth century occupation.

Layer C, a thin gravel layer, is also evidence of the National Park Service's attempt to facilitate drainage. Gravel was most readily apparent in the units next to Park Building 48, but did extend out into the yard. Large amounts of bottle fragments were found within Layer C. A plastic comb, crown caps, and screw tops all confirm a twentieth-century date.

Layer D was likely a fill level with twentieth-century artifacts such as decorative molded bottles with an Art Deco design, crown caps, enamelled bottles and bottles stamped with "No Return". Feature 24, associated with the recapping of Feature 1, was exposed below layer D. The fill material comprising Layer D covered the construction debris from the National Park Service's reworking of the foundation. The above levels were then added to provide adequate soil and drainage to allow present sod to grow.

Layer E was a pre-National Park Service ground level. Layer E consisted of a loam with many artifacts including: glass marble, toy gun, a lapel pin, plastic bottle top, crown caps, and a 1946 penny. Additionally, Feature 25, a possible shale paving, was found within Layer E suggesting a possible long exposed/used ground surface. Feature 24, a feature attributable to the National Park Service's rebuilding of Feature 1, was found at the top of Layer E and appeared to lie at the surface or cut only slightly into the layer. All of this suggests Layer E was a 20th-century occupational layer.

The late 19th-century is missing in this unit as well as in the rest of the yard for Park Building 48. Layer F contained about 70% shale spalls ranging from large to small. Flecks of brick and mortar were also present along with artifacts dating to the 1830s. Most of the ceramics found were pearlwares with hand painted polychrome designs, transfer prints, annular designs and shell edges. Few of the ceramics were creamwares. Most of the glass was flat and some of the nails found could be identified as hand wrought. The layer was over one foot thick so it was divided into two arbitrary levels. The high concentration of shale spalls suggest a construction/destruction layer. The mid-nineteenth century date suggests that Layer F may be associated with the construction of the east wing building of Park Building 48.

The soil of Layer G did not differ from that of above. The lesser density of shale inclusion, however, differentiates Layer G from that above. Artifacts (such as pearlwares, creamwares, redwares, hand wrought nails, and few glass sherds) continue to give a 1820s-1830s date. Layer G marks a different activity period lying between the construction layer above and the destruction layer that was found below.

Layer H found a high concentration of chunks of brick and mortar. At first it was believed that this was associated with the construction of the east wing extension, but mortar was found in large broken chunks and attached to both shale and brick. This suggests destruction rather then construction. Perhaps this layer represents the destruction of an outbuilding (such as a kitchen or "bakehouse") that was removed to make room for the extension. Artifacts from Layer H provide and a 1820s date.

Layer I clearly consisted of a natural deposit of a dark yellowish brown sandy silt which is expected for a floodplain. Three arbitrary levels covering approximately 1.2 ft of depth were excavated. Levels I1 and I2 can probably be associated with the earliest occupation of the site (1810s-20s). These levels contained creamwares, red slipwares, early pearlwares, hand wrought nails, straight pins, butchered bone, oyster shell, and one military gunflint. Level I3, dug only in the northeast quadrant, proved culturally sterile, and so work on the unit was halted. The base of Feature 1 was found in the bottom-most level and so no further information is likely obtainable.

Feature 1, the shale foundation, forms the north wall of the unit. It ranges from 269.58 ft at the top to 265.36 ft. The top 1.3 ft was rebuilt by the National Park Service and is distinguishable from the original wall by the amount and type of mortar visible on the outside. The bottom 1.2 ft is 0.5 ft wider than the top for support.

Feature 24 was a lens of mortar butting up against Feature 1. Feature 24 sits just below Layer D. The lens of mortar lines up with the bottom of the National Park Service's rebuilt wall. Therefore, Feature 24 was a builder's trench for this recapping. Artifacts found include bottle glass, nails, wire, plastic, mortar, and brick.

Feature 25 was not completely exposed. It appears that the shale slabs may be sidewalk paving that served a twentieth-century occupation. Most of the exposed stones remain solidly implanted in the south wall of the unit giving an unknown width of the feature.

Feature 27 was a somewhat square trash pit, surrounded by natural sterile deposit in Megalayer VII. The feature was full of small shale spalls, charcoal, and artifacts dating to the early 19th-century. The feature may have been a shallow trash pit. When first excavated it was only a few tenths of an inch thick. The pit, however, changed its form as it was dug. Roots were present in the area and may have caused this anomaly in the soil.

HARPERS FERRY NATIONAL HISTORICAL PARK

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 10, (N500 E515)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
I	H	10YR 4/3 7.5YR 5/8	LOAMY CLAY	268.87	268.87	TOPSOIL
I	B	10YR 4/4	SAND	268.87	265.71	LATE 20TH-CENTURY SAND BEDDING/FILL
I	C	10YR 3/2	SILTY LOAM	268.71	268.52	LATE 20TH-CENTURY SAND BEDDING/ FILL
I	D	10YR 3/2	SILTY LOAM	268.87	268.46	LATE 20TH-CENTURY FILL
I	E	10YR 3/2 10YR 4/4	LOAM	268.46	268.46	20TH-CENTURY OCCUPATIONAL LAYER
IV	F1	10YR 3/6 10YR 3/2	SILTY LOAM	268.46	267.35	SHALE LEVEL WITH ARTIFACTS DATING FROM THE 2ND QUARTER OF 19TH CENTURY-PERHAPS CONSTRUCTION
IV	F2	10YR 3/6 10YR 3/2	SILTY LOAM	267.35	266.94	SHALE LEVEL WITH ARTIFACTS DATING FROM THE 2ND QUARTER OF 19TH CENTURY-PERHAPS CONSTRUCTION
V	G	10YR 3/6 10YR 3/2	SILTY LOAM	266.94	266.63	CONTINUATION OF ABOVE WITHOUT SHALE
VI	H	10YR 3/6 10YR 3/2	SILTY LOAM	266.63	266.33	1820S DESTRUCTION LAYER. RELATED TO BAKEHOUSE/SMOKEHOUSE
VII	I1	10YR 3/4	SANDY SILT	266.33	266.17	NATURAL DEPOSIT-EARLY 19TH-CENTURY HABITATION-PERHAPS ORIGINAL STRUCTURE
VII	I2	10YR 3/4	SANDY SILT	266.17	265.56	NATURAL DEPOSIT-EARLY 19TH CENTURY HABITATION-PERHAPS ORIGINAL STRUCTURE
VII	I3	10YR 3/4	SANDY SILT	265.56	265.71	NATURAL DEPOSIT-CULTURALLY STERILE
I	FEATURE 1	N/A	N/A	265.56	265.71	FOUNDATION WALL FOR "GHOST" BUILDING ON EAST SIDE OF BUILDING 48
I	FEATURE 24	10YR 5/4 10YR 4/3	SAND	268.46	268.46	MORTAR FILLED TRENCH FROM RECAPPING FEATURE 1
I	FEATURE 25	N/A	N/A	268.71	268.12	SHALE SLABS RUNNING EAST TO WEST-POSSIBLE SIDEWALK PAVING
VII	FEATURE 27	10YR 4/4	SANDY SILT	265.97	265.71	POSSIBLE TRASH PIT-EARLY 19TH CENTURY

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORMS

PACKAGE 118 PARK BUILDING 48

Frank Walski and Ken Kulp

EXCAVATION UNIT 11 (N516 E515)

This unit was excavated within the east wing on the north side. There were three features associated with this unit. Feature 1 was a wall capped by the National Park Service with cement and was visible above ground. There was a doorway that marked the north boundary of Excavation Unit 11 but it is likely that the National Park Service created the opening when they rebuilt the upper 1.0 ft of the foundation in the 1960s.

Feature 2 underlies Feature 1 and was probably the original wall/foundation. It measured about 0.7 ft wider than Feature 1. There was no evidence of a door sill in Feature 2 but two joists pockets existed for a wooden floor. Feature 26 consisted of a shale and brick floorway with an uneven surface. The top of Feature 26 was found at the base of Feature 2. This feature was most likely the flooring of the bakehouse or kitchen prior to its destruction

Layers A through B was 20th-century fill/landscaping. Layer C was a gravel parking lot for Park Building 48. Layer D1 was a mid to late twentieth-century cultural level that served as a laundry/sewing area as it contained a large amount of buttons, pins, and a pair of scissors. This conclusion was confirmed by oral histories with former residents. A 1950 Lincoln cent provides a TPQ. Layer D2 was a second quarter of the nineteenth-century cultural level. Four large-cent pieces were recovered in addition to some flow-blue ceramics, marbles, and a piece of lead-shot. The dates on the large-cent pieces were 1820, 1822, 1827 and one illegible coin.

Layer E was a sandy lens and was only in the eastern half of the unit. Levels F1 through F4 consisted of 80% shale spalls and was related to first quarter of the nineteenth-century quarrying and construction. Feature 26, a brick floor, was contained in level F3.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 11, (N516 E515)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	ELEVATION AMSL FT BOTTOM	DESCRIPTION
-	SOD	N/A	N/A	270.16	270.16	SURFACE/SOD/GRASS LAYER NATIIONAL PARK SERVICE LANDSCAPING
I	A	10YR 4/2	LOAM	270.16	269.92	TOPSOIL FILL (NATIONAL PARK SERVICE)
I	A	10YR 4/4	SAND	269.92	269.75	NATIONAL PARK SERVICE FILL (SAND)
I	C	10YR 4/1	SAND/GRAVEL	269.75	269.21	POSSIBLY AN OLD PARKING LOT FOR BUILDING 48 OR POSSIBLY DRAINAGE FOR AN OLD WASHROOM FLOOR
II	D1	10YR 4/4-3/2	MOTTLED SANDY LOAM WITH SILTY CLAY	269.21	268.69	CULTURAL LEVEL, THE AMOUNT OF BUTTONS AND A PAIR OF SCISSORS SIGNIFIES THAT THIS WAS PROBABLY USED AS A LAUNDRY/SEWING AREA; DATES TO 1950S
IV	D2	10YR 4/4-3/2	MOTTLED SANDY LOAM WITH SILTY CLAY	268.69	268.34	CULTURAL LEVEL DATING TO 1830S; 1827, 1872, 1820 LARGE CENT PIECES;
IV	E EAST 1/2 OF UNIT	10YR 3/4	SAND	268.93	268.82	SAND LENS ABOVE SAND/SHALE LAYER IN EASTERN 1/2 OF UNIT 1 PIECE OF GLASS, NAIL, WHITEWARE
IV	F1	10YR 4/3	SAND WITH SHALE	268.82	268.32	80% SHALE SPALLS/FILL, PROBABLY 1830S FILL
IV	F2	10YR 4/3	SAND WITH SHALE	268.32	267.61	80% SHALE SPALLS/FILL-PROBABLY 1830S ABOVE FEATURE 26 (POSSIBLE KITCHEN OR SMOKEHOUSE FLOOR)
VII	F3	10YR 3/4	SAND WITH SHALE	267.63	267.19	80% SHALE SPALLS WITH SAND. FEATURE 26 TAKEN OUT IN THIS LEVEL (POSSIBLE KITCHEN OR SMOKEHOUSE FLOOR)
VII	F4	10YR 4/3	SAND WITH SHALE	269.10	266.59	80% SHALE SPALLS; FILL UNDER BRICK FLOOR WITH VERY FEW ARTIFACTS
I	FEATURE 1	N/A	N/A	271.75	269.10	SHALE WALL RECONSTRUCTED BY THE NATIONAL PARK SERVICE THAT SITS ON FEATURE 11, (WIDER FOUNDATION) EAST OF BUILDING 48
IV	FEATURE 11	N/A	N/A	269.10	267.93	ORIGINAL WALLS/FOUNDATION UNDERLYING FEATURE 1
VII	FEATURE 26	N/A	N/A	267.63	267.63	FLOOR CONSISTING OF BRICK AND SHALE. POSSIBLY A KITCHEN, BAKEHOUSE OR SMOKEHOUSE FLOOR

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Ken Kulp and Susan Frye

EXCAVATION UNIT 12 (N500 E505)

Layer A, National Park Service fill layer, was a very dark greyish brown sandy loam with some shale spalls and a mixture of artifacts including a 1979 Lincoln head penny. Feature 1, the east wing foundation and Feature 28, the modern patio for Park Building 48, cut this layer. A sand layer characterized Layer B and was National Park Service fill. Layer C consisted of a stone layer covering the extreme northern and southern parts of the unit and was a very dark greyish brown loam with some sand. Layer D contained a very dark greyish brown loam with some sand but no stones. Both Layer C and D date to the late 1960s and early 70s.

Feature 29 contained plaster and rubble probably from the reconstruction of Feature 1. Layer E, located under Layer D and Feature 29, was represent by a very dark brown loam, and contained a mixture of artifacts dating to the 1950s. Layer E was divided into two 0.5 ft arbitrary levels. Located in the layer were large shale slabs, Feature 25, probably the remnants of a walkway. This walkway was disturbed by a pipe trench (Feature 5) and pipe (Feature 4) that ran through the eastern half of the unit. The pipe trench was not characterized by a soil color difference, therefore Layer F was excavated in eastern and western halves to contain the mixture of artifacts produced by the pipe trench and to make it easier to date the levels.

Layer F, dark brown loam with 80% shale spalls, consists of 1830s fill and was excavated into two arbitrary layers. The western half of this layer was disturbed and therefore produced a mixture of artifacts.

The iron pipe, was removed in Layer F2, therefore the lower layers were not disturbed by modern intrusions.

Layer G contains brown/dark brown silty loam with some shale spalls and large shale slabs and dates to the 1820s-1830s. Located underneath Layer G and next to and above Layer H was Feature 30. Feature 30 consisted of an ashy loam along with large pieces of charcoal and small shale spalls. Feature 30 was a dumping of hot ash probably related to the outbuildings. A dark brown silty loam with shale spalls and lenses of greyish brown and a yellowish brown silty clay was included in Layer H. Layer H artifacts date to 1810-1820s. Layer I, a dark yellowish brown sandy silt, was probably a natural flood layer dating to the 1810s-1820s.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 12, (N500 E505)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
-	SOD					NATIONAL PARK SERVICE
I	A	10YR 3/2	SANDY LOAM	269.27	268.98	NATIONAL PARK SERVICE FILL WITH SOME ROCKS IN EXTREME NORTHWEST AND SOUTHWEST CORNERS
I	B	10YR 3/3	SAND	268.69	268.93	NATIONAL PARK SERVICE FILL LAYER OF SAND
I	C	10YR 3/2	STONE WITH LOAM AND SOME SAND	268.93	268.85	1970S FILL LAYER
I	D	10YR 3/2	LOAM WITH SAND	268.85	268.67	1970S FILL LAYER
I	FEATURE 29	10YR 3/2	LOAM WITH SAND	268.67	268.51	RUBBLE LAYER
I	E1	10YR 2/2	LOAM	268.69	268.23	1950S LEVEL DISTURBED BY A WATER PIPE (FEATURE 5)
I	E2	10YR 2/2	LOAM	268.23	268.09	1950S LEVEL DISTURBED BY A WATER PIPE (FEATURE 5)
IV	F1 WEST 1/2	10YR 3/3	LOAM 80% SHALE	268.06	267.55	DISTURBED BY FEATURE 5 PIPE TRENCH
IV	F1 EAST 1/2	10YR 3/3	LOAM 80% SHALE	268.13	267.55	DISTURBED BY FEATURE 5 PIPE TRENCH
IV	F2 WEST 1/2	10YR 3/3	LOAM 80% SHALE	267.55	266.92	1830S DEPOSITS
IV	F2 EAST 1/2	10YR 3/3	LOAM 80% SHALE	267.75	266.92	DISTURBED BY FEATURE 5 PIPE TRENCH
VI	B	10YR 3/3	SILTY LOAM	266.88	266.38	1820S LAYER WITH SOME RODENT DISTURBANCE
VII	FEATURE 30	10YR 5/2	ASHY LOAM	266.69	266.38	ASH LENS
VII	B	10YR 3/3	SILTY LOAM	266.38	266.22	1810S-1820S DEPOSITS
VII	I	10YR 3/3	SANDY SILT	266.22	265.95	NOT MANY ARTIFACTS WERE FOUND, STERILE LAYER
I	FEATURE 28	N/A	N/A			SHALE PATIO OF BUILDING 48
I	FEATURE 1	N/A	N/A			STONE FOUNDATION
I	FEATURE 5	N/A	N/A			POSSIBLE PIPE TRENCH FOR FEATURE 4
I	FEATURE 4	N/A	N/A			IRON PIPE (REMOVED FROM UNIT)

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Eric Larsen, Paul Shackel and Susan Frye

EXCAVATION UNIT 13 (N500 E520)

Excavation Unit 13 was opened adjacent to Excavation Unit 10 and south of the east wing (Feature 1) for Park Building 48. The unit was laid on the grid with the foundation wall (Feature 1) forming the north edge of the unit. The sod was removed without screening to repeat the first layer.

Layer A, a silty loam topsoil layer, held twentieth century artifacts such as metal pull tops and twentieth century bottle glass. This layer of topsoil can be safely attributed to National Park Service occupation.

Layer B consisted of a sand bedding above a thin lens of gravel. This probably served as a drainage bed for the National Park Service topsoil. Artifacts, such as cellophane cigar wrappers, crown bottle cap, pencil ferule, and hard paste whitewares, all suggest a twentieth century date.

Layer C appeared to be a fill layer with chunks of brick and mortar and shale spalls found askew. Layer C piled up next to Feature 1 as might happen when depositing fill around a wall. Artifacts produced a twentieth century date.

Layer D seemed to be a twentieth-century occupation layer with artifacts such as ceramic marble, hardpaste whitewares, a crown cap bottle finish, and an eye glass lens. Layer D was pre-National Park Service occupation and corresponds with layer E in Excavation Unit 10 with its possible 1940s-1950s date.

Layer E, a shale level, may be associated with the construction of Park Building 48's east wing. Artifacts such as hand painted and transfer printed pearlwares along with creamwares gave a mid nineteenth-century date. The layer was thick enough that it was divided into two arbitrary levels.

Layer F seemed to be a habitation layer dating to the 1840s construction of the east wing and after the demolition of the "bake-house." Artifacts included a gun lock from a flintlock musket, button forms, ceramic tobacco pipe bowls and stems, slip trailed redwares, hand painted pearlwares, and a higher frequency of creamware then found in above layer. Layer F did not differ much from layer E in color or texture, but the frequency of shale inclusion diminished significantly to about 20%.

Layer G had a high concentration of mortar chunks, brick, and shale. This layer contained a very high concentration of domestic refuse that included different redwares, creamware, a variety of pearlwares, nails, a complete bayonet, a possible partial gun barrel, a high concentration of bone, shell, and gunflints. The presence of formed mortar suggested a destruction phase. Perhaps this represented the destruction of an outbuilding (such as the bakehouse) removed to make room for the extension or wing. Artifacts give an early nineteenth century date.

Layer H was a natural river deposited soil with early occupation. Artifacts were found mainly at the top of the layer and contained with domestic refuse. Two pitcher spouts were found with nails, a buckle, flat glass, bone, and shell, and an English gunflint. One panelled bottle base was found but appeared to be of early origin (manufacture technique seemed to have been blown into mold). Layer H was dug in two arbitrary levels and was ended after the second.

Three features were present in Excavation Unit 13:

Feature 24 consisted of a lens of mortar adjacent to Feature 1. This appeared to be a builder's trench from the National Park Service's recapping of the extensions foundations. The trench was deep and about one foot wide right next to the wall with a more gradual incline above. Artifacts such as an aluminum wrapper, copper wire, bottle glass all suggested a twentieth-century activity. Additionally, Feature 24 found between layer C and D lined up to where the National Park Service work began. An unidentified white concretion (lime perhaps?) was found directly next to Feature 1.

Feature 25 was a shale paving with a laid brick edging. Feature 25 was first exposed in Excavation Unit 10 but lacked the brick edging found in Excavation Unit 13 along the north edge of the shale. This edging was in places three courses thick--with one course set up on end at a diagonal, surrounded by courses of flat brick. This work was quite substantial for a sidewalk (as previously believed). Feature 25 rested on top of layer E and may have been present through the late 19th century.

Feature 31 was a stain found at the bottom of level H2. It was excavated as a possible pit. All mottled soil was removed. While digging, many roots were found intersecting through the pit. A rodent burrow became evident on the west edge of the pit. Artifacts continued to be found in a level deeper than occupation had proven before and proved consistent with those found in above level H2. The exact nature of Feature 31 is unclear--whether it is indeed a refuse pit or just root or rodent disturbance?

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 13, (N500 E520)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
I	A	10YR 3/2	SILTY LOAM	269.08	268.76	SOD AND TOPSOIL LAYER
I	B	10YR 4/4	SAND	268.89	268.76	SAND BEDDING FOR TOPSOIL WITH THIN GRAVEL LAYER AT BASE
I	C	10YR 3/2	SILTY LOAM	268.76	268.54	20TH-CENTURY FILL LAYER ASSOCIATED WITH NATIONAL PARK SERVICE OCCUPATION
II	D	10YR 4/3	LOAMY SILT	268.54	268.76	20TH-CENTURY OCCUPATION LAYER-PRE-NATIONAL PARK SERVICE
IV	E1	10YR 3/2 WITH 10YR 5/4	SILTY LOAM	267.96	267.51	SHALE LEVEL-POSSIBLY ASSOCIATED WITH CONSTRUCTION OF 1830S WING
IV	E2	10YR 3/2 WITH 10YR 5/4	SILTY LOAM	267.51	267.06	SHALE LEVEL-POSSIBLY ASSOCIATED WITH CONSTRUCTION OF 1830S WING
V	F	10YR 3/2	SILTY LOAM	267.06	266.64	HABITATION LEVEL PREDATING 1830S WING
VI	G	10YR 3/2	SILTY LOAM	266.64	266.02	MORTAR LEVEL PROBABLY ASSOCIATED WITH BAKEHOUSE DESTRUCTION-HIGH CONCENTRATION OF DOMESTIC ARTIFACTS
VII	H1	7.5YR 3/2	SANDY SILT	266.02	268.10	RIVER DEPOSIT WITH EARLY 19TH-CENTURY OCCUPATION
VII	H2	7.5YR 3/2	SANDY SILT	265.85	268.76	RIVER DEPOSIT WITH EARLIEST HISTORIC OCCUPATION
I	FEATURE 24	10YR 5/4	SAND	268.62	268.10	BUILDER'S TRENCH FOR NATIONAL PARK SERVICE RECAPPING OF FEATURE 1
I	FEATURE 25	N/A	N/A	268.68	268.03	SHALE "PAVING" WITH BRICK EDGING
VII	FEATURE 31	10YR 4/4 WITH 10YR 5/4	SILTY SAND	265.43	264.37	STAIN IN SOUTHEAST CORNER OF UNIT-EXCAVATED AS PIT WITH ARTIFACTS

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Ken Kulp, Susan Frye and Paul Shackel

EXCAVATION UNIT 14 (N500 E510)

The sod was removed and Layer A was exposed. Layer A, a very dark greyish brown sandy loam, contained roots and rootlets. A dark yellowish brown sand with gravel was excavated as Layer B. In the adjoining unit, Excavation Unit 12, the gravel and sand were excavated as separate layers, but it was decided to excavate them as one layer in Excavation Unit 14 since they date to the National Park Service occupation. Both Layers A and B contained artifacts that date to the 1970s-1980s. Layer C contained a dark brown loam with sand and two features 23, and 25.

Feature 24 was located in the northern part of the unit along Feature 1. It contained a dark yellowish brown sandy loam with plaster and rubble. Feature 24 probably represents the trench that was used to repair Feature 1.

Feature 25 was a brick outline that could have been an outline for a porch or shale slab walkway. The feature was a single brick outline, end to end, that ran across the unit from east to west in the southern half and ran from north to south in the eastern half of the unit. A total of 12 bricks comprised the feature.

A very dark brown silty loam with ash, coal cinder, and shale spall were contained in Layer D. Layer D fill dated to the turn of the century. A shale level with dark brown loam and 80% shale spalls, dating to the 1830s, comprised Layer E.

Layer F, a very dark greyish brown silty loam, had about 10% shale spalls and dated to the 1820s-1830s. The shale rubble was concentrated in the area closest to Feature 1. Layer G contained a brown/dark brown soil and dated to the 1810s-1820s. This layer contained brick, shale, and mortar believed to be from the destruction of the bakehouse that once stood in the vicinity.

Feature 32 contained the same soil color and texture as Layer G but also had charcoal deposits. The same type of materials dating to the early 19th-century were unearthed.

Layer H, believed to be a sterile natural flood level, contained a dark greyish brown silty sand. Two corroded nails were found in the transition zone between Layer G and Layer H. Feature 1, the northern wall of the unit, cut through all layers in the unit.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 14, (N500 E510)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT TOP	BOTTOM	DESCRIPTION
I	SOD					
I	A	10YR 3/2	SANDY LOAM	269.15	267.33	NATIONAL PARK SERVICE FILL
I	B	10YR 4/4	SAND AND GRAVEL	268.43	268.78	NATIONAL PARK SERVICE FILL
I	C1	10YR 2/3	LOAM WITH SAND	268.78	268.43	NPS FILL 1970S-1980S
I	FEATURE 24	10YR 4/4	LOAM WITH SAND AND PLASTER RUBBLE	268.43	268.16	RUBBLE FILL PROBABLY FROM THE REPAIRING OF FEATURE I IN 1970S
II	C2	10YR 4/4	LOAM WITH SAND	268.33	268.04	20TH-CENTURY FILL
IV	D	10YR 2/2	SILTY LOAM	268.04	267.98	LATE 19TH-CENTURY EARLY 20TH-CENTURY OCCUPATIONAL LAYER
IV	E	10RY 3/3	LOAM	267.98	267.33	1830S FILL; 80% SHALE SPALLS
V	F	10YR 3/2	SILTY LOAM	267.33	266.91	1820S-1830S MATERIALS; 20% SHALE SPALLS
VI	G	10YR 4/3	SILTY LOAM	266.91	266.22	1820-1830S MATERIALS PROBABLY FROM DESTRUCTION OF BAKEHOUSE/SMOKEHOUSE
VII	FEATURE 32	10YR 4/3	SILTY LOAM	266.30	265.94	1820S-1830S MATERIALS POSSIBLE GUTTER NEXT TO HOUSE
VII	H	10YR 4/2	SILTY SAND	266.00	265.64	NATURAL STERILE FLOOD LAYER; PRE 1820S--VERY FEW SHALE SPALLS

HARPERS FERRY NATIONAL HISTORICAL PARK
EXCAVATION UNIT SUMMARY FORM

PACKAGE 118 PARK BUILDING 48

Paul Shackel, John Ravenhorst and Ken Kulp

EXCAVATION UNIT 15 (N500 E525)

The sod layer was removed prior to controlled excavations. Layers A and B consisted of National Park Service filling dating from at least the early 1960s. Part of Layer B had gravel which was also found in most of the excavation units located around the east wing of the house. The gravel served as the base for a parking lot for the resident's in Park Building 48. Layers C1 and C2 had a mix of shale and mortar. These layers were probably fill as most of the artifacts date from the early nineteenth century to the late twentieth century. Some materials were related to the destruction of the east wing.

Layer D had small inclusions of shale and artifacts tended to date to the 1830s. Layers E1 and E2 had a large domestic assemblage comprised of mostly ceramics and bone. All artifacts dated to the early 19th century and were probably related to an 1830s-1840s occupation.

Layers F and G were related to the destruction of the bakehouse and contained large quantities of shale, brick and mortar. The difference between Layers F and G is that Layer G had a greater concentration of mortar. Some gun related materials were found, such as a ram rod, and may be related to the armory worker's occupation. Other materials included large quantities of wrought iron related to kitchen activities.

Layer H was sterile although some artifacts were found in the transition between G and H.

SITE: 46JF92 PACKAGE 118, PARK BUILDING 48 EXCAVATION UNIT 15, (N500 E525)

MEGA STRATUM	STRATUM	MUNSELL	TEXTURE	ELEVATION AMSL FT		DESCRIPTION
				TOP	BOTTOM	
-	SOD			268.95	268.92	SOD LEVEL--20TH CENTURY
I	D	10YR 4/3	SILTY LOAM	268.92	268.78	LATE 20TH-CENTURY TOPSOIL LAID OVER GRAVEL BEDDING; 20% GRAVEL
I	B	10YR 4/3	SILTY LOAM WITH GRAVEL	268.78	268.65	A LAYER OF NATIONAL PARK SERVICE FILL OVERLYING RUBBLE (MOSTLY SHALE AND SOME BRICK) 50% SMALL GRAVEL
I	E1	10YR 4/3	SILTY LOAM	265.80	268.78	MIX OF SHALE AND MORTAR; PROBABLY FILL;40% SHALE
I	FEATURE 25			268.67	267.94	A VERTICLE SHALE SLAB LINED WITH BRICK THAT MAY HAVE BEEN EDGING FOR THE FRONT PORCH OF THE EAST WING OF BUILDING 48
I	C2	10YR 4/3	SILTY LOAM	268.22	268.00	END OF FILLING EPISODE AROUND THE SOUTHEAST CORNER OF EAST WING
IV	D	10YR 4/3	SILTY LOAM	268.00	267.93	A 19TH-CENTURY LAYER OVERLYING THE GRAVEL AND SHALE
IV	E1	10YR 3/2	SILTY LOAM	267.93	267.57	A GRAVEL LAYER WITH MOSTLY 1830S MATERIALS
IV	E	10YR 3/2	SILTY LOAM	267.57	267.04	CONTINUATION OF GRAVEL LAYER
VI	F	10YR 3/2	SILTY LOAM	267.04	266.55	GRAVEL MIXED WITH MORTAR-MAY BE TOP OF BAKEHOUSE DESTRUCTION LAYER
VII	G	10YR 3/2	SILTY LOAM	266.55	268.70	BAKEHOUSE DESTRUCTION LAYER
VII	H	10YR 4/3	SILTY SAND	265.80	265.43	STERILE LEVEL. ARTIFACTS FOUND IN TRANSITION OF G AND H

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